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ORIGINAL ARTICLES.

A CASE OF INFANTILE SCORBUTUS, IN MONTANA.

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Infantile scorbutus was first definitely described by Dr. Cheadle in 1878. This description he further supplemented by cases published in 1879 and 1882. Prior to that time these cases had been recorded as acute rickets, especially by German observers. In 1883, Dr. Barlow first established by two post-mortem examinations that the disease was true scurvy. In this country, Dr. Northrup confirmed Dr. Barlow's observations by a post-mortem made on a child dying from an indetermined disease at the New York Foundling Asylum in 1889. Since that date various post-mortem and clinical cases have placed the correctness of these views beyond dispute.

This disease is, however, comparatively rare. It occurred but once in over two thousand cases of children seen at the out-door department of Bellevue Hospital (Neuhaus) and not once in a thousand cases at the same department of St. Mary's Free Hospital for Children (Carr). It is, however, less commonly observed in hospitals than in private practice. In 1891, Dr. Northrup was able to collect only 11 cases; while but twelve months since, 106 cases were reported at the New York Academy of Medicine. The frequent refusal of mothers to nurse their children and almost universal use of proprietary foods are said to account for this increasing frequency of the disease.

These proprietary foods mixed with water or condensed milk are the most common causes of the disease. Condensed milk alone, and fresh milk unduly diluted have also produced some cases. Prolonged sterilization of milk so far destroys its nutritive power as to give rise to scorbutus. It is more common among the children of wealthy parents than among those of the poorer classes. The latter are unable to procure proprietary foods, and give their children antiscorbutics from their table at an earlier age than scurvy generally develops. Hence its rarity in hospital practice.

The principal lesions occur in the femora, tibiæ, scapulæ, ribs and cranium. Those found on post-mortem examination by Dr. Barlow (Medico-Chirurgical Transactions 1883, Bradshaw lecture 1894) were due to extravasation of blood. This occurred between the periosteum and the shaft of the thighs. Fractures between the lower epiphysis and the shaft were found in marked cases; the periosteum was very vascular but there was no inflammatory effusion. In the interior of the bone was found evidences of rickets, and hemorrhage into the medullary canal, There was also extravasation of blood round the tibia, which was fractured at the line of junction of the epiphysis and the shaft. The ossifying centers showed evidence of rickets. There were large extravasations of blood into the deep muscular layers of both the leg and thigh. The periosteum of the fibula was congested but only slightly detached. Extravasations surrounded the entire scapula. Anteriorly it was so marked as to produce a tumor recognizable during life; posteriorly the raised periosteum had produced a thin layer of bone. The periosteum was found detached from the ribs with a chocolate colored detritus of broken-down blood clot intervening. The ribs were quite bare and separated from their costal cartilages at the line of junction; they were found to be mere shells filled with extensive indosteal hemorrhage. The cranium showed thin extravasations in the vicinity of the petrous bone on both parietals. There were also found a subperiosteal extravasation into the eye-ball. Hemorrhages have been found in the lungs, and under the capsule of the spleen. Blood-stained serum existed in the pluræ. Hemorrhages have been noted in the mucous membrane of the stomach and intestinal canal, and rarely slight ulceration. The dark spongy, hemorrhagic condition of the gums of children with teeth is characteristic of the disease. Now that the general practitioner is becoming familiarized with its symptoms, autopsies will be exceedingly rare. Fortunately the hypodermic needle may be used to draw off some of the effused blood from around the femora in doubtful cases. Few people will risk making extensive incision and burning out the blood clots, as did Mr. Page, of St. Mary's Hospital, London.

The following case developing during the summer on the plains of Montana, amid hygienic surroundings, illustrates nearly all the clinical features of the disease:

N. F., a female born July, 1891; has nursed until 3 months old. She was then fed on Mellin's Food and condensed milk. On this diet she seemed to thrive for about nine months. At 5 months her teeth began to appear; during the next two months she cut eight, then no more showed until she was 16 months. Her meals when 9 months consisted of the following: Two tablespoonsful of Mellin's Food to one of condensed milk in one half-pint of water every three hours. She never learned to creep on all fours but when about 7 months old she used to pull herself about the floor in a sitting position, and to stand on her feet. The first indication of her illness was that she refused to move in this way, or to stand when supported. It was not noticed that she was fretful but she grew more delicate, seemed tired all the time, and unable to move her limbs. Her favorite position was with her head resting on her nurse's arm and her legs drawn up. When she was about a year old her parents went a visit to the Yellowstone National Park. While there it was noticed that her gums

were dark and swollen. The doctor in attendance did not in any way connect this swelling with her inability to move her limbs. It was considered a vascular outgrowth, which was accordingly removed and cauterized. Notwithstanding this treatment the gums continued to enlarge and bleed on pressure.

At about the same time it was noticed that her left leg was painful and that she cried when it was handled or when her shoes were put on. Soon after her right leg became similarly affected. These were considered rheumatic symptoms, and she was treated accordingly. During this time her head perspired freely and needed to be dried quite frequently. She also suffered from diarrhea throughout the summer. Her discharges were generally green and slimy; blood was passed with some of the motions, so as to give rise to the suspicion of "bleeding piles." No fever was observed at any time during her illness; neither was any change observed in the color of her urine. When the lower limb became painful the doctor did not think, from comparing it with the other, that there was any increase in size. At no period of her illness were her parents or attending physician able to note any swelling, but no accurate measurements were taken. One of the five doctors under whose observation she now passed made an attempt to change her diet to cow's milk. It was found to disagree, causing nausea and constipation, so the attempt was abandoned. The parents state that they did not understand this change to be at all essential, but simply an experiment. When she was about 16 months old I first saw her in consultation. The patient was anemic but fairly developed; the muscles, however, were soft and flabby, the hair was sparse and the head moistened with perspiration; there was no cranis tabes. The chest was well formed but there seemed to be slight beading of the ribs. The abdomen was not prominent. The legs lay helpless, were not moved, and were exceedingly tender to the touch. The thighs appeared slightly infiltrated between the knee and the hip, but were smaller in size. The arms were freely moved. There was no enlargement of any of the epiphyses and in fact no symptoms of rachitis, save slightly "beaded" ribs, and marked perspiration about the head. There were no petechiæ present and no fever. The gums notwithstanding frequent cauterization, were so enlarged as almost to cover the teeth, of a dark purple color, and bled on the slightest application. The breath was foul, and the bowels relaxed.

The diagnosis of infantile scorbutus was made from the pseudo-paralysis and excessive tenderness of the lower limbs, but more especially from the condition of the gums, which was characteristic. It was apparent from the symptoms that there was little if any extravasation around the femora and tibiæ. This is a condition that has been noted on post-mortem examination by both Drs. Cheadle and Sutherland. However, during convalescence and while the patient was under my immediate observation, a large subcutaneous hemorrhage was found on the thigh without known cause. Others probably occurred at an earlier date. The diarrhea—in this case complicated with blood—to which Dr. Carr has called attention was quite prominent. The "beaded" ribs and the head perspiration led me to believe that the scorbutus was complicated with a mild degree of rachitis.

The child was put on fresh milk and a rational diet suited to her age. The attending physician gave a little lime water and cod liver oil for the rachitis. Later, when she came under my immediate care, Thompson's solution was given for the same purpose. She steadily improved and would now make a splendid picture for an advertisement, setting forth the fact that proprietary foods are always useless, and frequently dangerous.

As in the present case, infantile scurvy is usually mistaken for rheumatism. Less frequently it has been confounded with hemophilia or congenital syphilis. Even at the present time some writers, like Dr. Ashby (*Practitioner*, December, 1894) refuse to admit the existence of true scorbutus in children, and contend that it is only acute rickets complicated with anemia which gives rise to a tendency to bleed. The same hemorrhagic condition he asserts to be present in tuberculosis. Fresh vegetables are looked upon as a preventative of scurvy, but with regard to fresh food, such as meat and milk, there is, he believes, no such agreement. However, the failure of observers like Dr. Northrup to find evidence of rachitis, even in the post-mortem examination of the case which formed the base of our knowledge of the disease in this country, the rapid recovery of cases when given antiscorbutic diet and the occurrence of the subperiosteal and other hemorrhages characteristic of scurvy, as it affects the adult, will induce most observers to hold with Drs. Cheadle and Barlow that the disease as seen in children is no other than true scorbutus.

NERVOUS DISEASE IN EARLY SYPHILIS.

Read before the Chicago Academy of Medicine, October, 1895.

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Involvement of the nervous system in late syphilis is so common that all practitioners of experience have met with syphilitic nerve phenomena of varying types. Nervous disturbances occurring as a part of the clinical picture presented by the secondary or active period of the disease are much less frequent—so much so that such cases are often overlooked and even discredited as syphilitic possibilities by physicians in large practice.

Surgeons of large experience in the treatment of syphilis, with better opportunities for the study and systematic management of the disease have, on the other hand, come to regard early nerve disease in syphilis as sufficiently frequent to merit special consideration. Hutchinson and Fournier, in particular, have expatiated upon this point, the former having described some beautifully typical examples of nervous disease occurring within the first year or two of syphilis. In one of his earlier communications, Fournier described a very peculiar form of anesthesia or analgesia, occurring coincidentally with the roseola. That instrument of diagnostic precision, the ophthalmoscope, has demonstrated beyond peradventure of doubt, the occasional occurrence of syphilitic retinitis within or shortly after the first year of the disease.

Some of Hutchinson's cases, are by no means indubitably syphilitic; others, however, are so marked as to be beyond controversy. Apropos of the clinical reports of this confessedly great authority, almost

any conservative diagnostician will, I think, agree with me in the assertion that he displays a tendency to take a great deal for granted. Some of the cases of nervous syphilis which he reports are substantiated by the authoritative weight of an eminent opinion, rather by clinical data. Laying such cases aside, however, enough clearly cut cases remain to demonstrate the accuracy of his conclusions upon the general question of the early occurrence of nervous syphilis.

It has been the fortune of the author of the present paper to meet with a number of cases of varying types of nervous phenomena occurring in the early months of syphilis. Some of the manifestations observed are quite common and would deserve no attention were it not for the fact that their neuropathic origin is not generally understood. I will not attempt to present cases of this kind, inasmuch as the phenomena presented are a matter of common and daily observation. These simpler and more common phenomena constitute a part of the so-called syphilitic fever, and embrace slight neuralgias in different situations, varying degrees of cephalalgia, extreme mental depression, so-called rheumatic pains in different parts of the body. I will also present as neuropathic in character, several other lesions which at first sight would seem far removed from nerve disorder.

The illustrative cases presented do not embrace all of those observed, nor have they been taken at random, but have been selected because of the clearness of their history and clinical evidences of syphilis and their distinctness of type.

Case 1.—Obstinate and Severe Cephalalgia Occurring Coincidentally with the Syphilitic Roseola. The patient, a woman about 22 years of age, was brought to me by her lover, who was under my treatment for secondary syphilis, his chancre, which was typically Hunterian, being still present. The history of this woman was one of the most classical that it has ever been my fortune to follow; the case was also a most lamentable one in its results, as I afterwards treated her little daughter for syphilis imparted by the mother in some unknown manner, no chancre being discoverable. In the course of the sixth week after her chancre was discovered, the woman presented herself with a well marked roseola complaining at the same time of the most severe headache. Iritis developed within three months, the headache becoming still more severe. To make matters worse, mercury was badly tolerated. Free inunction having been resorted to, the symptoms were finally brought under control, with the exception of the headache, which persisted with diminishing severity for at least a month after the other symptoms had disappeared. The headache in this case was diurnal, as well as nocturnal with, however, somewhat typical exacerbations. There was at no time such tenderness of the cranial bones as is likely to exist in cases of bone involvement. A source of embarrassment in this case was the necessity for the prolonged administration of morphia, other sedatives having no apparent effect. There was in this case, no previous history of nerve disorder. Pronounced mental depression from worry over her condition and fear of detection, was the only determining cause of the cephalalgia as far as I was able to judge. As might be imagined, the free use of mercurials rather enhanced this condition.

I will again allude to the element of mental disquiet in this case in my analysis of cases.

Case 2.—Severe and Protracted Cephalalgia occurring in the Fourth Month of Syphilis.—This case was that of a woman 30 years of age, who gave a very clear history of syphilis. At the time of my first examination alopecia, small mucous patches, faucial engorgement, adenopathy, and a fading roseola were still visible. Spasmodic efforts at mercurial treatment had been made, the remissness having been the fault of the patient and not of her physician—a most capable man. Headache came on about two weeks before I saw the case, but had become severe only within a few days. In spite of active treatment the cephalalgia persisted until I was entirely out of patience with my anti-syphilitic therapeutics. There was a history of previous mild attacks of headache, and an obscure history of rheumatism. I grasped at the latter straw, and although the headache was typically nocturnal, salicylate of soda was given, without result, save that of increasing the patient's anemia. Opiates now became the main feature of the treatment. It so happened that I was experimenting just then with the salicylate of iron. This was one of the few remedies that had not been tried, and I therefore prescribed it, with the gratifying result of effecting a complete cure within a few weeks.

Of the two cases of cephalalgia above outlined, I have been able to follow the subsequent history of but one. Case 1 is at present under observation, and after eight years remains apparently well.

Case 3.—Severe Intercostal Neuralgia with Symptoms Simulating Pleuro-Pneumonia, occurring coincidentally with the Roseola. A man, 35 years of age, who was under my treatment for an initial sore, developed in the fourth week a well marked chill followed by fever, attended by cough, decidedly rusty sputa and bilateral râles, painful respiration, dyspnea, and the most severe intercostal neuralgia I have ever observed. The symptoms were verified by two gentlemen who were serving as my assistants. The temperature was only 100 degrees F. and the patient appeared by no means as ill as his symptoms seemed to warrant. I confess, however, that the possible diagnosis of an impending syphilitic eruption which I made, was a very long shot. I must acknowledge moreover, that I ensconced myself behind the possibility of a complicating pneumonia. I prescribed a warm bath and a hypodermic of morphia and on the following morning found the patient perfectly comfortable but covered with a pronounced and well generalized roseola.

The subsequent history was that of the usual tractable case of syphilis.

Case 4.—Severe Lumbo-Abdominal Neuralgia as the Initial Symptoms of Secondary Syphilis. A man 40 years of age, consulted me regarding what were apparently soft chancres. These sores healed kindly, but I gave the patient fair warning of the possibility of a mixed infection. After about two weeks following the healing of the non-infecting local difficulty, the patient consulted me regarding a transformation of the cicatrix into a typical initial lesion of syphilis. The new difficulty proved resistant to treatment, and my patient went the way of all disgruntled patients and changed surgeons. The new attendant took pains to tell him I was mistaken and his anxiety was greatly relieved thereby. Several weeks later, however, the patient developed what his doctor styled lumbago; the new symptoms proving refractory, the patient again changed doctors and sent for me. I found him suffering from a most agonizing lumbo-abdominal neuralgia with nocturnal exacerbations. On removing his clothing I found a well marked and extensive syphilitic roseola. This was attended by a temperature of 101 degrees. Under active mercurial treatment this case progressed quite satisfactorily with the exception of the neuralgic manifestations, which lasted nearly a month. Dry cupping and counter irritation were necessary in addition to internal remedies.

This patient stated that he was slightly rheumatic, and on inquiry related a strain which had affected his back some years before his syphilis was contracted. He had never had lumbago and asserted that his back had given him very little annoyance since the old injury.

Case 5.—Hemianesthesia occurring during the early part of the Second Year of Syphilis. The patient was a man 35 years of age with an extremely neurotic heredity. He has been a hard worker in his commercial life and at the same time was a high liver and quite intemperate at times. He had been comparatively well, however, until he contracted syphilis about fourteen months before I first saw him. His treatment had consisted of several more or less spasmodic mercurial and iodid courses at the Hot Springs. His symptoms while classical had at no time been prominent, mucous patches and moderate but typical alopecia being the most prominent symptoms. Ptyalism had several times been induced, a fact which should be duly considered in connection with the subsequent neurotic disturbances. At the time I first saw the case no special symptoms were present. The patient was hypochondriacal and neurasthenic, but presented no

pronounced evidence of nervous disease. The treatment prescribed was of a simple tonic character. Here, I think, was an error, and yet I believe that my reasoning was sound enough, as I suspected over-enthusiastic dosing in the previous course of the case. I will say in passing, that I often ignore the syphilis and prescribe for the patient, generally with the best results. Improvement in the patient's general condition was quite rapid. About a month after beginning treatment, however, he fell from grace and made a night of it, wine and women being equally prominent factors in his escapade. The second morning thereafter, I was sent for and found a badly scared and penitent patient with pronounced right hemianesthesia. There was slight impairment of muscular power and marked diminution of the reflexes. The patient stated that his trouble had evidently come on during sleep, as he had noticed nothing abnormal until he awoke in the morning. He said he could walk when he awoke, but that the numbness in his hand and arm was quite distressing, these members feeling as though they belonged to some one else.

The late Dr. Jewell saw this case in counsel and verified the diagnosis of syphilitic disease affecting the region of the internal capsule, without expressing any definite idea of the character of the pathologic process, of which more anon.

Complete recovery ensued under large doses of the iodids associated with liberal inunctions of mercury. This treatment was followed by two years of tonic specific treatment in conjunction with the double chlorid of gold and sodium. The patient is to-day married, has healthy children and is enjoying the best of health.

Case 6.—Severe Generalized Neuralgia and Spinal Pain Associated with the Roseola—Paraplegia in the same Patient within Eighteen Months. A man 55 years of age was referred to me by my friend, Dr. Thackery, with what was apparently a soft chancre. This proved refractory in healing but finally cicatrized without induration up to the time when the patient passed from under my observation. Some six weeks after the healing of the sore, the patient again consulted me for what had been termed a lumbago. A few days after leaving me he had developed a severe attack of la grippe from which he was slowly recovering when the so-called lumbago came on. Experience had made me suspicious of lumbago following genital sores, hence I immediately directed the patient to strip. As I anticipated, a pronounced roseola was present. The pain in the back extended until the entire spine was involved, radiating into the abdominal region, thighs and arms; so severe was the pain that the patient was unable to move and could not rest comfortably in any position. Sleep was for a time an unknown quantity. The reflexes were exaggerated and there was no paresis. My friend, Prof. H. N. Moyer, saw the case with me and concurred in the diagnosis of syphilitic involvement of the cord, but I believe that he, like myself, was unable to precisely define the condition. Spinal hyperemia was as definite as anything in my own mind. I fancy that Dr. Moyer rather leaned to the opposite view, but I am by no means positive on this point. Neither of us felt justified in pronouncing the case one of spinal meningitis—a rather plausible diagnosis.

The predisposing influence of grippe received its due meed of consideration. The case proved very stubborn, and the most radical anti-syphilitic measures associated with counter irritation, electricity and massage were for a time almost ineffectual. Inunction to the verge of ptyalism finally caused the case to yield, but recovery was very slow. A very important point for consideration in this case was the fact which I afterward discovered, that the woman from whom the patient contracted the disease was with him almost constantly during his six weeks' confinement in bed. This association was by no means platonic, as both parties duly appreciated the fact that they had been quite efficiently vaccinated.

Eighteen months after his apparent recovery, the patient reappeared with paraplegia, treatment having been neglected during the interim. I gave the patient some suggestions as to treatment, but declined to again take the case. He has apparently recovered, judging by his gait as he walks about the streets. The development of paraplegia within a few months after the original spinal pain is worthy of note.

Case 7.—Facial Hemiatrophy Associated with Unilateral Deafness Developing in the Early Part of the Second Year of Syphilis. A man of 30 years presented himself with syphilitic nodes upon the tibiæ and a single small tubercle upon the forehead. Syphilis had developed two years previously. About nine months before I first saw him, the patient developed what appeared to be a severe facial neuralgia. This lasted some weeks and as it was subsiding the patient noticed that the cheek upon the affected side was becoming somewhat hollow. The wasting continued for several months but had evidently stopped when he consulted me for the other symptoms. At this time the left side of the face presented a very peculiar appearance, all of the muscles being more or less affected by the atrophic process. The patient stated that for a time he was compelled to masticate entirely upon the right side, bnt this trouble had disappeared. Thorough treatment with mercury and the chlorid of gold and sodium apparently cured this patient's syphilis, but the facial hematrophy remained unchanged. At about the time the facial neuralgia developed, deafness of the corresponding ear was noticed. This increased until the loss of hearing was complete. Like the facial difficulty, the deafness remained unchanged by the treatment.

A very similar case came under my observation several years ago in which, however, the facial trouble did not develop for several years after the primary sore and was unattended by deafness.

Professor Moyer saw this case with me. As in the preceding case, treatment was of no avail.

Case 8.—Right Hemiplegia in the Third Month of Syphilis. This case is one of the most interesting of the series. I was called to see a young man of 20 years of age whose friends were evenly divided upon the question of paralysis and acute alcoholism. As the young man was attacked quite suddenly while taking a few social drinks, and was unable to articulate on his arrival home, the variance of opinion was by no means surprising.

On examination I found almost complete right hemiplegia with associated aphasia. According to the statements of his friends, the patient had always been in perfect health. He drank some, but had not been previously known to indulge to excess.

On directing the patient to open his mouth and protrude his tongue—a feat which he found difficult of accomplishment—I detected several mucous patches on the tongue and lips. There was marked mental sluggishness. On stripping the patient I found a well-marked maculo-papular syphilide, comprising a fading roseola and recently erupted papules. Examination of the genitals revealed a typical initial sore with enormous induration, which had been present about twelve weeks. Adenopathy, both general and local was well marked.

This patient recovered completely under inunctions followed by the internal administration of mixed treatment and the protiodid in alternation. At present, four years later, he remains well.

Case 9. Left Hemiplegia Developing Eight Months after the Initial Lesion.—A young man 20 years of age, was referred to me for partial hemiplegia one week after its onset. On inquiry I found that he had been treated for syphilis in a spasmodic fashion for about eight months. The history was a typical one, mucous patches being still present. No other signs of syphilis save general adenopathy were present.

Recovery in this case was slow but satisfactory. There has been no relapse up to date—three years and a half since I first saw the case.

Case 10.—Left Hemiplegia Ten Months after the Initial Lesion. A man 40 years of age consulted me two months after the onset of left hemiplegia. The paralysis had at first been complete, but sufficient improvement had occurred to enable him to get about with the aid of a cane. A clear history of syphilis was obtained, the chancre having appeared about one year before the patient came under my observation.

Treatment had not been systematic. Sterno-clavicular periostitis on the right side and a characteristic thickening of the tibial periosteum were noted.

No other symptoms of syphilis were present. Under vigorous treatment the paralysis improved somewhat, but not to a satisfactory extent. The other symptoms were rapidly relieved. At the present time, nearly five years since he first came under my care, the patient is free from symptoms of syphilis, but is still hemiplegic, the upper extremity being especially disabled.

Case 11.—Facial Paralysis Developing at About the end of the First Year of Syphilis. A medical man whom I had previously treated for syphilis, consulted me regarding left facial paralysis, which he believed to be due to syphilis. I confess that there were no definite data for such an opinion, but in view of the history and most rapid improvement after anti-syphilitic treatment was begun, the diagnosis of syphilitic paralysis seemed a fair one despite the possibility of other and more common causes. The patient has been under observation only a few months, but seems quite well at the present time.

Case 12.—Symptoms Simulating Tabes in the Third Month of Syphilis. True Tabes Developing in the Same Case Six Years Later. It is by no means frequently that we are enabled to secure as definite data on the relation of syphilis to tabes as in this case. Even in this case moreover there are so many sources of fallacy that the syphilitic etiology of the final ataxic manifestations is by no means proved beyond question. Personally, I am inclined to the view that the late cord disease was of syphilitic origin. Respecting the preliminary attack of spinal trouble, there can be little doubt as to its syphilitic character. The patient was a man of 30 years of age, who had been intemperate and sexually excessive, but quite healthy until he contracted a chancre. This ran a typical course and was followed in the sixth week by a pronounced roseola and a severe type of so-called syphilitic fever, necessitating confinement to bed. Within a few days he complained of rheumatoid pains in his limbs, to which I am free to say, I attributed very little attention at the time. At the end of a week, he attempted to get up and found considerable difficulty in walking. On examination I found the gait of a distinctly ataxic character. There was some loss of sensation and almost complete abolition of the knee reflex. The pupils were normal. The condition did not progress and proved of short duration, a month of vigorous treatment bringing about recovery. For some months, however, the patient complained of a trifling unsteadiness of gait when he had been exposed to overwork or worry. This finally passed away and for some years he remained well.

Six years and a half after the original chancre, the patient again presented himself with symptoms of incipient tabes dating back about six months. The symptoms slowly progressed until quite typical tabes had developed although vigorous treatment had been persevered in. The patient finally passed from under my observation but I afterward heard that he died some three years later as a result of his tabes.

I have met with numerous other cases illustrative of the early nerve disorders of syphilis, but they were either of trifling importance or the data were insufficient to warrant my presenting them to as scientific a body as this Academy.

In several cases I especially regret the lack of data. One such, which I will briefly mention, was that of a young man of 33 years of age, who developed hemiplegia in the second year of syphilis. Following the paralysis which was never perfectly cured, epileptiform convulsions came on. Treatment was of little avail and the patient eventually became insane. Certain property complications made this a *cas celebre* thus enabling me to follow the case after a fashion, long after it passed from my care.

It has been my aim to avoid cases in which the evidence was chiefly hearsay; this may enhance the value of the clinical report. It is perhaps to be regretted that my cases have not been minutely studied by the neurologic expert, but it will at once be recognized that the neurologist is most likely to meet with the later and more obstinate types of syphilitic nerve disease. A report based upon observations made from the standpoint of the syphilographer, may be of especial value to the general practitioner in the recognition and study of the early nerve phenomena of syphilis.

GENERAL CONSIDERATIONS.

The various forms of nerve and brain disease of syphilis, have received attention chiefly as phenomena of late syphilis, and even in the late cases it has been considered sufficient to classify them as nervous lesions, without any attempt at a critical study of the varying conditions underlying them. The terms, diffuse and circumscribed gummy infiltration, have covered a multitude of pathologic conditions of widely varying types. There is to be sure, more uniformity in the pathogenesis of late nerve disease than in the forms, yet in a general way, what I have to say of the precocious forms, will apply in a certain degree to the more systematic later types. There is often in the later forms a very important plus factor in the etiology due to excessive drugging and the syphilitic cachexia. This factor may exist in early cases, but it is exceptional. The prognosis in all forms of nerve syphilis is fairly good, if we except the debatable cases of tabes and general paresis. With early treatment the prognosis is much more favorable than is usually believed even in the late types.

It is worthy of note that the more typical the lesion in late syphilis, the better the prognosis; thus, a definite gummatous deposit may always be expected to yield to judicial treatment. Symptoms which do not yield, are due to lesions which may be termed post-syphilitic in the true sense of the term, or to nutritional disturbances produced, not by the action of syphilitic poison *in loco*, but by the pressure and irritation of products which have usually long since lost their infectious properties. I believe that all tertiary changes are essentially post-syphilitic and certainly can not regard tabes and paretic dementia in any other light, where we have reason to accept them as syphilitic in origin.

The prognosis as regards recurrence is excellent, in well treated late cases of gummatous nerve disease. This is apparently not so true of the early cases. It may be that the necessity for vigorous treatment is not so well appreciated in the earlier periods, but be that as it may, the occurrence of neuropathic disturbances in early syphilis, is likely to be a premonition of future and more serious nerve trouble.

In the writer's opinion, a clear understanding of the principles of pathogenesis underlying the early nervous phenomena of syphilis can only be obtained by regarding the disease as microbial. Independently of the question of the known or unknown character of the germ, analogic reasoning alone should convince the intelligent observer of the logic of this position.

Having accepted this premise, another point is to be considered, viz., the *modus operandi* of the germ. In a general way it may be stated that the germ of syphilis follows a very regular and systematic evolution or life history. As with all pathogenic microbes therefore, we must take into consideration the soil,

the action of the germ *per se* and the action of certain toxins which it produces: 1, by its own excretory functions; 2, by the morbid changes which it excites in the tissues in which it operates.

The action of the germ may be said to be in brief, the excitation of morbid impulses and new properties in certain anatomic tissue elements. These new properties are: 1, a tendency to rapid proliferation; 2, a tendency to fatty degeneration; 3, infectiousness. In time, as the life history of the germ is completed, the property of infectiousness is lost, but the other evil properties remain as long as the least trace of the syphilitic impress exists. The effect of the toxins may still remain but no new ones are formed, save by the cell changes themselves,—metabolic toxins. The tissues know the germ toxins no longer, save perhaps, by their effects. The action of the early toxins may lay the foundation for cell changes which occur long after the germ has fulfilled its mission and disappeared.

The relation of such debatable diseases as tabes and paretic dementia to early intoxication of the brain and cord is yet to be shown, but I feel justified in asserting that such early nerve intoxication may have much to do with these late phenomena. What Hutchinson terms "vulnerability," may thus be rationally explained.

I desire in passing, to state that most physicians regard syphilis in the light of a tissue destroyer, the syphilitic poison being supposed to roam about like the traditional lion, seeking innocent cells and fibers to consume. This is a serious error, and has been responsible for much wild pathology and still wilder therapeutics. Syphilis is a builder of tissue—such as it is,—and destroys, not by corrosion but largely by pressure innutrition. Perhaps some of the severe lupoid, necrotic and phagedenic lesions of tertiary syphilis may be quoted in contradiction, but it would be easy to show their fallacy. As a matter of fact, the disease is only apparently destructive and even its apparent destructiveness is generally manifested after the germ has probably disappeared. With reference to prognosis, there is this to be said, viz., if the syphilized cells constituting syphilitic neoplasia —whether situated in the nervous system or elsewhere—be removed before pressure innutrition and absorption of the tissue elements have occurred, perfect recovery ensues. The more delicate the structure, the more quickly must the removal be accomplished. The practitioner must beware of delay in those obscure cases of sudden deafness, certain cases of disseminate or patchy choroiditis and neuro-retinitis occurring in syphilitics. These affections when neglected in the slightest degree, and often *ab-initio in neuro-retinitis*, rank with tabes and general paresis, with respect to their curability.

The practitioner should remember that his remedies may effectually remove syphilis, but may fail to remove the ruins produced by it. Let us examine a scar left by subcutaneous resolution and absorption of a syphilide and then imagine a similar scarring, if you please, of nerve tissue and we can readily understand some obscure points in syphilitic neuropathology and therapeutics. Apropos of this proposition, my position regarding the administration of mercury and iodin as a crucial diagnostic test in some forms of nerve syphilis may be readily surmised. The failure of mercury and the iodids in tabes and paretic dementia, has often been used as the chief argument of those who deny the specific origin of these diseases. As well say that a long standing case of paraplegia or hemiplegia can not possibly be of specific origin, because forsooth, mercury and iodin will not cure them. Another point: Mercury and iodin may remove the adventitious deposit very quickly, yet fail to impress the new connective tissue which has been thrown out as a consequence of the irritation induced by the syphilitic neoplasia. To the neurologists present there may be nothing novel in this view, yet how few practitioners understand it.

As is readily apparent from what has already been said, I am inclined to place toxins in a very prominent position in the etiology of early syphilitic nerve disease. I also believe in their more remote relation to some of the later types of nerve phenomena. It now remains to consider how the toxins act. As I have observed what I assume to be their effects, I believe that syphilitic toxins act in several ways, viz.:

A. By direct intoxication of nerve tissue.	1. Central. 2. Ganglionic. 3. Peripheral.
B. By the induction of vasomotor changes via the sympathetic ganglia or the so-called monarchical vasomotor center in the medulla.	1. Of the vessels of the central nerve system. 2. Of peripheral vessels 3. Of visceral vessels.
C. Direct intoxication and irritation of vascular tissue producing in the nervous system.	1. Active hyperemia. 2. Passive congestions 3. Inflammations of lower type.

The question at once suggests itself; if toxins are present in syphilis and they are so variously and multitudinously pathogenic why do not all syphilitics present such results in greater or less number and severity? To the practical clinicians present, such a query would never suggest itself, but the practitioner who is impressed with the typically specific character and routine effects of syphilis on the average might well be expected to be a doubting Thomas. And let me add at this juncture, that the plus factors in syphilis are too little appreciated even by the expert. The man who sees nothing peculiar in the determination of a mucous ulcer by the irritation of a jagged tooth or the use of tobacco, is at once at sea when confronted with a syphilitic nervous disorder. The relation of cause and effect is, it is true, not so easily determined in the latter, but it is none the less definite. Throughout the course of syphilis we find lesions which are determined by very simple and common factors. Thus mucous irritation long continued determines mucous plaques, ulcers, papillary hypertrophies, fissures, tubercles and condylomata. Gouty and rheumatic irritations of muscle, tendons, ligaments, and synovial membranes determine so-called syphilitic and mercurial rheumatism of such structures. Gout and rheumatism predispose to iritis, neuralgias, and infiltration of arteries. Just so surely do such sources of irritation as alcoholism, sexual excess, the gouty and rheumatic diathesis, mental over exertion or worry, determine nervous disease of a type corresponding to the seat of irritation. This applies not only to the toxin neuroses, but to phenomena due to structural changes, *i.e.*, to syphilitic new growth. The element of heredity is of importance, but as we well know, a neuropathic tendency may exist without it.

(To be continued.)

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RETRO-DISPLACEMENTS OF THE UTERUS WITH SOME MODES OF TREATMENT.

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The different opinions which have been and still are held regarding the pathologic importance of the retro-positions of the uterus, together with the many different mechanical and surgical measures employed for their relief, form an interesting and profitable study. The subject is not a new one; and it would seem that a sufficient amount of evidence is already at hand to warrant definite opinions and establish well defined lines of remedial procedure. This, however, is not the case; for one who reads the literature of the subject from the time of Simpson to the present day is liable to be a good deal confused both as to the importance of the condition itself and the value of the different remedies for its relief.

Dr. Simpson's articles on retro-position were published between 1843 and 1848. They were the first extensive observations upon the subject which had yet been published. The prominence of the writer brought out many articles on the subject and his extreme views as to the importance of the displacement had many adherents. Thus we find Ashwell in 1844 making the following observation: "Retroversion is an alarming, but a rare displacement and when fully established the altered position of the uterus is most striking. The fundus is turned downward and backward into the hollow of the sacrum, while the os and cervix are carried upward and forward, impinging on or lying above the symphisis pubis. It is the opposite of anter-version and demands more prompt attention; for although at first, neither the structure nor the function of the organ are affected, if it be overlooked or neglected it will not be long ere extreme irritation and danger ensue." (Ashwell, Ed. 1845, p. 418.) Quoting further from Ashwell (p. 420): "Retroversion is not at the moment of its occurrence, except it happen very suddenly, indicated by any marked change in the patient's state of feeling; she generally remains ignorant of the accident until an attempt is made to relieve the bladder. Failing in this she becomes alarmed and uses straining efforts but is unable to accomplish the act. The distension and the inability continue to increase—and in twenty-four hours if the catheter is not used the suffering will be extreme—but the bladder is not the only organ whose functions are interfered with; the rectum is so pressed upon by the fundus of the uterus that constipation and sometimes almost entire suppression of stools ensue." Other symptoms given by the same author are nausea and vomiting, painful fullness in the pelvis, dragging in the loins, and expulsive pains like labor; also stomachic and abdominal pain, fever with quick pulse, hot skin and great restlessness. (*Ibid*).

Views similar to the above were expressed by Rigby, Protheroe Smith, Henesley and other contemporaries of Professor Simpson. These opinions were antagonized, however, by Drs. Bell and Oldham, but their greatest opponent was Dr. James Henry Bennett who, in 1849, criticized the views of Dr. Simpson's followers in the following language: "There has been a great tendency, of late years, to exaggerate the importance of this displacement. The essays of Dr. Simpson himself, although highly practical and interesting, are not free, in my opinion, from this reproach (Bennett 'On The Uterus,' Ed. 1850, p. 202). I am the more disposed to insist upon the opinions which I entertain upon this subject, as several writers in their attempts to follow Dr. Simpson's researches have published such singularly erroneous statements respecting retro-version of the uterus and its symptoms, that I feel called upon to enter my protest against doctrines calculated to mislead the profession. Thus it is repeatedly asserted that it frequently, if not generally gives rise to all the local, functional and general symptoms and reactions which I have described as characterizing inflammatory affections of the uterus, to engorgement of the uterine neck, to chronic inflammation of the ovaries. ('Sterility and C.,' *ibid* p. 203). These assertions are stated to be founded upon clinical fact; but I firmly believe that they are, to a great extent, deduced from facts misunderstood or misinterpreted." (*Ibid*).

Notwithstanding the protests of Bennett and a few others, the views of Simpson seem to have been generally adopted in England. Previous to Dr. Simpson's publications too, there already existed in Germany and France, quite an extensive literature on the subject of retroversions; and views of their importance as pathologic factors held by the German and French gynecologists did not differ materially from those expressed by the Edinburgh professor. Among those of the German school who wrote of these displacements were Schweighauser, of Strasburg; Bruninghausen, of Wurtzburg; Schmitt, of Vienna; Schneider, of Baldy; and Kirchner, of Poeneck; and of the French the writings of Madam Boivin and Dr. Duges are the most conspicuous. Colombat, the painstaking and conscientious French gynecologist, published his work on the "Diseases of Females" in 1844 (translated by Meigs, Second Ed., 1850). In the preparation of this work, he states in the preface that he has examined the works of over one thousand writers on gynecologic subjects; and as this was more a consensus of opinion rather than a particular dogma of the author, the article on retro-positions of the uterus is reliable, in that it gives what was probably, the approved teaching at that time. Of the symptoms of retro-version this author writes as follows (Meigs' "Colombat," p. 160-161): "Supposing the womb to be non-gravid, and the cavity of the pelvis of ordinary dimensions, if the displacement takes place gradually, the patient begins to feel an inconvenient sense of pressure within the pelvis; then the groins, the loins, and thighs are affected little by little with dragging pains, which become more and more annoying. Soon after this the signs of inflammation of the womb become manifest, and the suffering more acute; the catamenia become disordered, either increasing or diminishing in quantity; a leucorrhea, which in some instances is bloody, flows during the intervals between the menses; the digestion is deranged; the appetite is lost; the woman grows thin and her strength diminishes. At length a fever sets in which in some cases, is of a high grade and continued type; but in others slight, and characterized only by heat of the skin, and by agitated evenings and nights.

"To the above symptoms, there is always added a sense of pressure at the bladder or rectum, giving rise to frequent desire to urinate or go to stool. During the flow of urine the jet is soon checked or suddenly arrested, and as the displacement always increases in proportion to the efforts made to expel

the urine and feces, the symptoms are always greatly augmented by those attempts." It is needless to point out that in the light of modern pathology, this formidable train of symptoms could not be produced by a mere retro-displacement of the uterus. Here we have an accurate portrayal of infectious invasion of the genital canal, beginning with a vaginitis and ending with profound pelvic inflammation. A striking example of Dr. Bennett's charge that the symptoms are misrepresented or misunderstood. This subject will, however, be discussed further on in this article.

In America, the extreme views of the importance of retropositions were adopted with little reservation. Meigs, writing in 1850, expresses himself thus: "In my opinion a majority of the cases called womb complaint, met with in this country, are cases of retroverted uterus. An ample experience teaches me that such instances are far more numerous than mere prolapsus. Indeed, a simple prolapsus not gone to the extent of procidentia, does not necessarily give the patient a great deal of distress. A woman soon becomes accustomed to a moderate degree of descent of the organ, and does not feel, or even suspect its existence." He further remarks that the accident is very common in girls who lead a sedentary life. In this class of cases, failure to empty the bladder at proper intervals produces stretching of the round ligaments until they become incapable of acting as uterine supports; and, also that the disease "ought to occur as frequently in the sedentary girl as in the wife and mother." (Meigs' "Colombat," p. 160). Sims and Hodge held similar opinions, and the latter will long be remembered for his extreme views regarding the value of the pessary which still have their influence with gynecologists. Dr. Thomas in 1880 ("Diseases of Women," fifth Ed.. pp. 436 and 438) gives the usual long list of symptoms produced by retro-displacements of the uterus. Among the consequences of posterior displacements, he mentions dysmenorrhea, endometritis, sterility, aveolar, hyperplasia, and pelvic peritonitis. "Furthermore," says Dr. Thomas, "the body sometimes descends to the upper extremity of the vagina and instances are recorded by Rokitansky and Schott in which it penetrated the walls of the vagina and rectum, and forced itself into these canals. This is a very rare exception, but it is worthy of mention as showing how great is the pressure which a retroflexed uterus may exert. "As rare complications may be recorded hematometra and hydrometra from imprisonment of fluids by obliteration of the canal by flexion at the os internum."

In Dr. Emmett's article on uterine versions ("Principles and Practice of Gynecology," Third Ed.) an elaborate system of tables is given; but a study of them brings little conviction beyond the fact that inflammatory changes are almost always found in connection with retro-versions.

More recent writers, as a rule, hold practically the same opinions as those already cited. Dr. Geo. S. Harrison, of New York, ("American System of Gynecology," Vol. II, p. 1116) says that "the symptoms of chronic retroversio-flexios are so multiform they embrace the entire gamut of morbid sensations;" and that besides the ills directly referable to the uterus and neighboring organs of which a very long catalogue is given, indeed, "the most varied alienations of the psychical sphere, the strangest forms of anesthesia and hyperesthesia of particular portions of the body, the most persistent forms of neuralgia, and, finally spasm and paresis involving different groups of muscles, may be dependent entirely upon retroversio-flexios and can be partially or completely relieved only by a restoration of the uterus to its normal position." This author says much more in the same strain, but it is not necessary to quote further from his article to show the importance which he gives to retro-displacements as pathologic factors. Pozzi dismisses the subject in a few lines, quoting the views of others without committing himself (Vol. I, p. 438). Skene in his treatise on the diseases of women (p. 308) mentions the common symptoms referable to the pelvic organs, making the reservation, however, that the suffering caused by retroversion varies greatly in different patients and that one of his patients who had retro-version many years, not only suffered no discomfort, but was one of the most active women he had ever known. Prof. August Martin, of Berlin, ("*Frauen Krankheiten*," p. 90) who mentions the usual symptoms of backache, pressure and dragging down, and vesical and rectal tenesmus found in connection with retro-positions, makes the following remark: "These appearances which are looked upon as quite particularly characteristic of retroflexions, the reactions upon the nerve plexes on the anterior wall of the sacrum and dependent inability to stand and walk belong more frequently, not to the retroflexion as such, but to a perimetritis which exists at the same time, and in these cases generally originates in the same puerperium as the deviation of the uterus, but not caused by it alone." (*"Diejenigen Erscheinungen, welche as gans besonders den retroflexion Eigenthümlich angesehen werden, die Rückwirkung auf die Nervengeflchte an der Vordern Wand des Kreuzbeines und dadurch bedingtes Unvermögen zu stehen und gehen, gehören viel haüfiger nicht zu Retroflexion als solche, sondern zu Einer Perimetritis, die gleichzeitig besteht und in diesen Fällen gewöhnlich aus demselben Wochenbett stammt wie die Deviation des Uterus von ihr allein aber nicht verursacht werden".*)

I have taken the trouble to examine all such authorities as I have access to and quoted freely from the same in order to show what has been and what now is the generally accepted opinion as to the pathologic importance of retro-deviations of the uterus as such. A consultation of a great number would probably not change the result, as the opinions quoted are those of representative men. From the evidence here presented, then, we are to believe that retro-version and retro-flexion may be productive of profound anatomic changes, inflammatory in their character and that they may give rise to symptoms "so multiform that they embrace the entire gamut of morbid sensations."

That a retro-version of a uterus otherwise normal and where the other pelvic organs are in a normal condition of health, can produce even a small amount of discomfort, is difficult to believe. The specific reasons given for the suffering caused by the displacement are pressure upon the rectum, producing rectal tenesmus, constipation and other associated ills, and obstruction to the circulation in the uterine body gives rise to uterine congestion, enlargement, metritis and endometritis, also, logically of salpingitis, followed by all the symptoms which these disorders generally produce. In retro-flexions we are to add a greater amount of obstructions, to the

circulation, by reason of the sharp bend in the uterine neck and also obstructive dysmenorrhea resulting from the same deformity. To convince you of the importance which has been given the pressure of the uterus alone, your attention is called to the cases cited by Dr. Thomas, in which the uterus is said to have penetrated the wall of the rectum and vagina, the pressure being so great as to completely obstruct the circulation in these parts. To impress this lesson upon us, Dr. Thomas remarks that "it is a rare occurrence, but it is worthy of remark as showing how great is the pressure which a retroflexed uterus may exert." (*loc. cit.*) The possibility of such a disaster from retroflexion would probably not find any believers at the present time, but the influence of such teaching is still with us.

The unimpregnated healthy uterus weighs from one to two ounces. Its supports are so arranged as to admit of very free vertical and antero-posterior movement. Its blood supply is abundant and the vessels are tortuous, admitting a free amount of stretching without encroachment upon their caliber. In perhaps a majority of cases the uterus rests upon the bladder when that organ is empty. When the bladder is moderately distended the uterus assumes an upright position and when extreme distension of

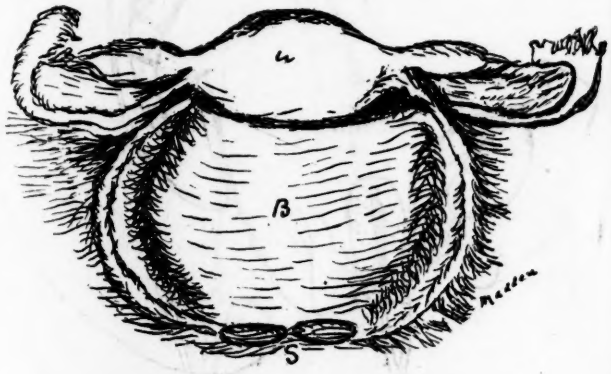

Fig. 1.—Long round ligament and broad vesico-uterine peritoneum, allowing free antero-posterior movement of uterus: bladder empty. S, symphisis pubis; B, bladder; U, uterus. (Diagramatic.)

the bladder occurs, the uterus may be slightly retroverted.[1] The round ligaments are regarded as the principal agents concerned in holding the uterus in its anterior, "normal," position; but they are frequently poorly developed or altogether absent. (Martin's "*Frauen Krankheiten*," p. 78). Another important factor concerned in holding the uterus in its anterior position is the extent of the uterine attachment to the bladder, as indicated by the depth of the vesico-uterine cul-de-sac. I have seen this nowhere discussed; but it is well known that the peritoneum in some cases dips deeply down between the uterus and the bladder, closely investing the former organ to or beyond the internal os before it is reflected upon the latter, while in other cases the cul-de-sac is very shallow, both organs being practically covered by the same fold. The importance of this broad stretch of peritoneum must be considerable, probably as great as that of the round ligaments themselves. When, therefore, the round ligaments are absent or only slightly developed, and when at the same time, the vesico-uterine cul-de-sac is deep, the uterus will certainly have a greater degree of antero-posterior mobility. It is impossible, under such circumstances that a retroverted uterus could have any pathologic importance, either by reason of its normal weight or that its circulation would be interfered with.

In the case of retro-flexions, excepting where they are congenital, they are probably always preceded by inflammation, usually cervical and corporeal endometritis with elongation and softening of the supravaginal portion of the cervix until it becomes incapable of supporting the enlarged uterine body. Nor is it quite clear how much of the dysmenorrhea met with in retro-flexion is due to the flexion, and how much of the inflammation to the cervical and corporeal endometritis. If the flexion is extreme, so that the axis of the cervix meets that of the body at an acute angle, the mechanical obstruction from this cause alone may, no doubt, be productive of a great deal of suffering. Such extreme cases of retro-flexion are,

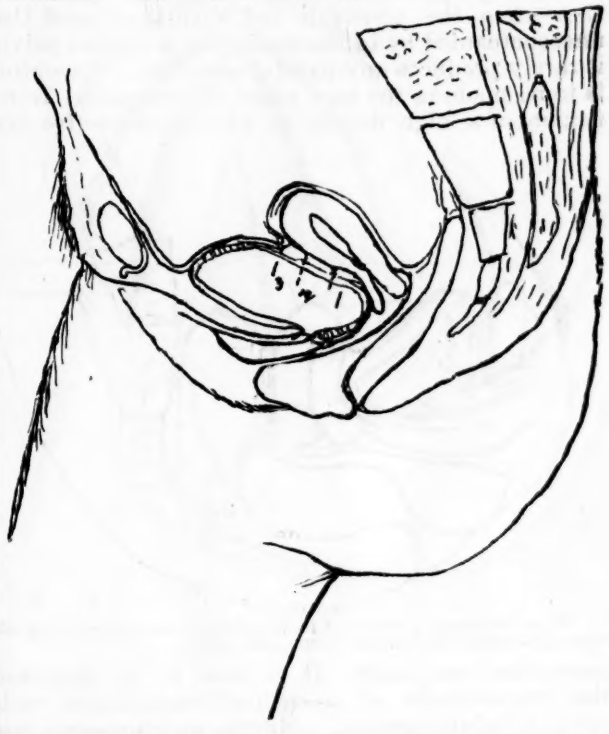

Fig. 2.—Different degrees of attachment between uterus and bladder; 1, 2, 3, different depths of vesico-uterine fold. Bladder moderately distended. (Diagramatic.)

however, rare. More often the axis of the uterine canal, at the junction of the cervix and the fundus, describes the arc of a circle with a comparatively long radius, the retro-flexion thus, in itself, not offering any considerable obstruction to the passage of menstrual fluid. This is not the case, however, when the cervical canal is already completely occupied by a redundant mucous membrane, the product of a long continued inflammation. It is not necessary to point out here that an endometritis with the uterus in its normal position may be productive of just as much and just as severe dysmenorrhea as the same inflammation produces when that organ is retroflexed or retroverted. In retro-positions of the uterus, too, especially in retro-flexions, much stress has been laid upon the passive uterine congestion brought about by obstruction of the circulation. Williams, some time ago called particular attention

[1] This is not true in all cases. Dr. George McClellan, of Philadelphia, found by experiment upon the cadaver that "if the bladder is gradually distended, while the bowel is empty, the fundus is raised until the organ assumes a decided anteflexion." (Regional Anatomy, Vol. ii, p. 113).

to the fact that each segment of the uterus is supplied from a different source, so that flexions could not be productive of obstruction. The fundus uteri receives its blood supply from the ovarian artery, the cervix from the uterine artery. Both vessels, with their accompanying veins, lie between the folds of the broad ligaments, beneath the Fallopian tubes. A mere bending backward of the uterus could not interfere with their functions. Let, however, a parametritis take place, an inflammation extending from the tubes to the tissue between the folds of the broad ligaments, and the encroachment upon those vessels with the accompany uterine congestion is easily understood.

What I firmly believe and what I wish to teach is, therefore, that retro-deviation of the uterus is not in itself a pathologic condition; that it is not productive of inflammation; but it is almost exclusively the result of inflammatory process; that the accompanying symptoms are those of the same inflammation when the uterus is not displaced; and that unaccompanied by inflammation, in a normal pelvis, it rarely produces any painful sensation. Exception is to be made in the rare cases of congenital retro-flexion, of a high degree, in which obstructive dys-

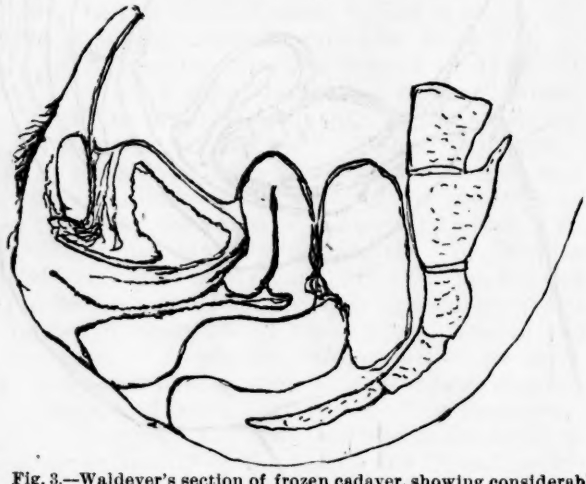

Fig. 3.—Waldeyer's section of frozen cadaver, showing considerable degree of attachment between uterus and bladder.

menorrhea may exist. It is here to be remarked that the evidence of congenital retro-flexion rests upon debatable ground. Martin mentions one case reported by Ruge, but the age of the subject is not given. Schultze and some others seem to conclude that a retro-flexion existing at the time of puberty is to be regarded as congenital. That this conclusion is valid is very doubtful. There is no reason for doubting that hypertrophic changes may take place in the infantile uterus as a result of infectious inflammation of the genital canal, producing cervical elongation and flexion; and that both the inflammation and the flexion remain unrecognized until the age of puberty is reached. Vaginitis and endometritis gonorrheal in their origin, are not extremely rare in young children. I have seen a most violent vaginitis, cystitis, and cervical endometritis in a child 10 years of age, whose father I was then treating for a long standing gonorrhea. I have seen a similar, but less severe, condition in a child 5 years old. In this latter case the disease was of long standing, and the father confessed to having had a gonorrhea nearly two years before.

Retro-deviations of the uterus are productive of no distinctive symptoms. When accompanied by any symptoms at all they are those of inflammation of endometritis, metritis, salpingitis and parametritis. I wish here particularly to mention a condition which is common in retro-displacements of the uterus as well as in inflammatory troubles in which no deviation is present, and which is, I believe, often erroneously attributed to the displacement itself, because relief follows a replacing of the organ in its normal position. I refer to the sensitive point which is found on one or both sides of the uterus, in the region of the Fallopian tube, and within an inch of its entrance into the uterus. There can not be much doubt that this sensitiveness is due to a salpingitis which may exist either alone or in connection with an endometritis. It is located in that part of the tube which suffers a free amount of bending motion during the vertical movements of the uterus; and any remedy which will take the weight of the uterus

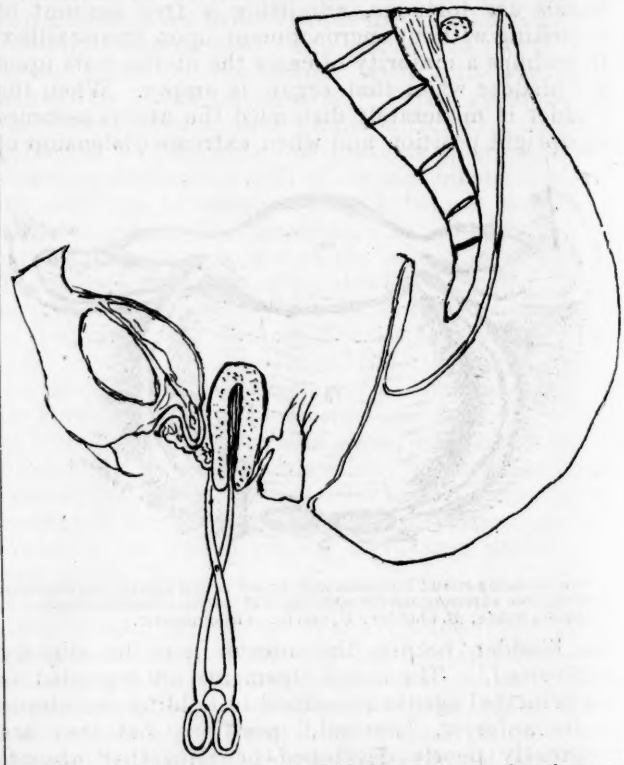

Fig. 4.—Relation of urethra and bladder to uterus when the uterus is drawn down. (Diagramatic.)

off the tubes and at the same time limit or abolish its vertical movements will be attended by relief, whether the uterine body is put in its anterior position or not. I have often seen such relief follow the mere filling of the vaginal vault with cotton, without any attempt made to remedy the retro-displacement. Where adhesions to Douglass' cul-de-sac exist, the posterior vaginal vault is sensitive, often exquisitely so; but here the secondary influence of the displacement is too manifest to need discussion.

It is not the purpose of this paper to discuss all the mechanical and surgical measures which have been used for the relief of retro-deviations. The most of them are well known and estimates of their value are as numerous at least, as the men who introduced them. I firmly believe, and this belief is founded upon a considerable amount of experience and observation, that through antiphlogistic and anti-

septic measures, temporary artificial support of the uterus where the tubes are inflamed, removal of diseased parts with the curette and by proper operations about a lacerated and indurated cervix, and the restoration of an injured pelvic floor together with proper attention to the general nutrition, will relieve all the symptoms attending retro-displacements in a great majority of cases without paying any attention to the deviations as such. Exception is here to be made where the inflammation has been extensive and destructive, where the uterus is firmly bound down by adhesions.

In concluding this article, I wish to mention only three operative procedures for the retention of the uterus in the anterior position: They are ventro-fixation, shortening of the round ligaments by drawing them through the external abdominal ring and the vaginal fixation of Mackenrodt. Ventro-fixation will

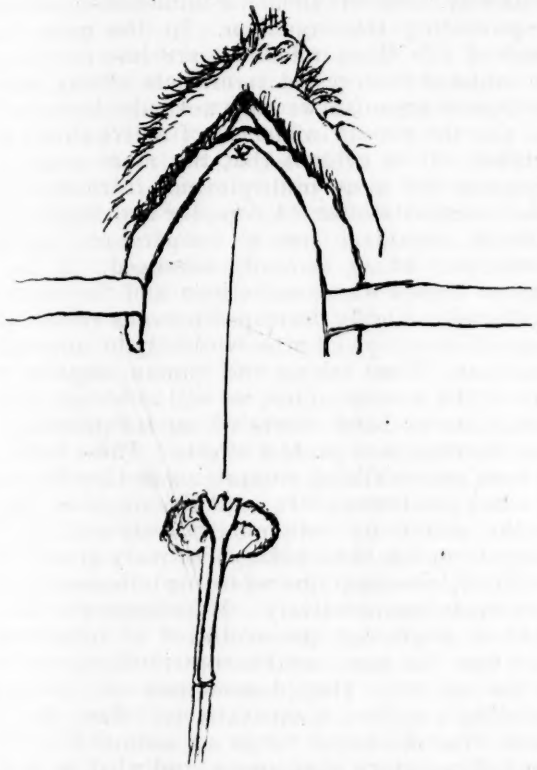

Fig. 5.—First step in Mackenrodt's operation. Uterus drawn down and anterior wall of vagina incised.

probably always be performed in those cases of retroversion in which the opening of the abdominal cavity is a necessity, especially for the purpose of breaking up of posterior adhesions. The value of the operation is not yet established. Martin had performed it forty-three times up to Feb. 1, 1893, thirty-one for posterior adhesions, eight times after the removal of myomata and four times for movable retro-flexions. Since the date here given, he has operated in the same manner a number of times but only for posterior adhesions and after the enucleation of myomata. Of the outcome of the forty-three cases here mentioned Professor Martin remarks: "The final results are not brilliant. After one to four years the adhesions of the uterus to the abdominal wall, were so much stretched that the uterus lay free. Sometimes through continuance of the existing perimetritis, the uterus was again brought to the retroflexed position." Only once have I had the opportunity to see the extent and strength of the adhesions which may be produced by ventro-fixation. This patient had been castrated by Dr. Christian Fenger, of Chicago, for a myoma about as large as an orange, situated in the left lateral wall of the uterus. A retro-uterine abscess developed for which I opened the abdominal cavity about a year afterward. There were two very firm areas of adhesion, probably aggregating one square inch and apparently capable of sustaining a weight many times greater than that of this very much enlarged uterus. But the tendency of adhesions thus produced, as in all other cases is toward absorption, making a just estimate of the final results of the operation impossible. If, however, the antero-position can be retained only long enough to prevent a re-adhesion of the uterus should it become again retroverted, the operation has an important place.

Opinions of the value of the so-called Alexander's

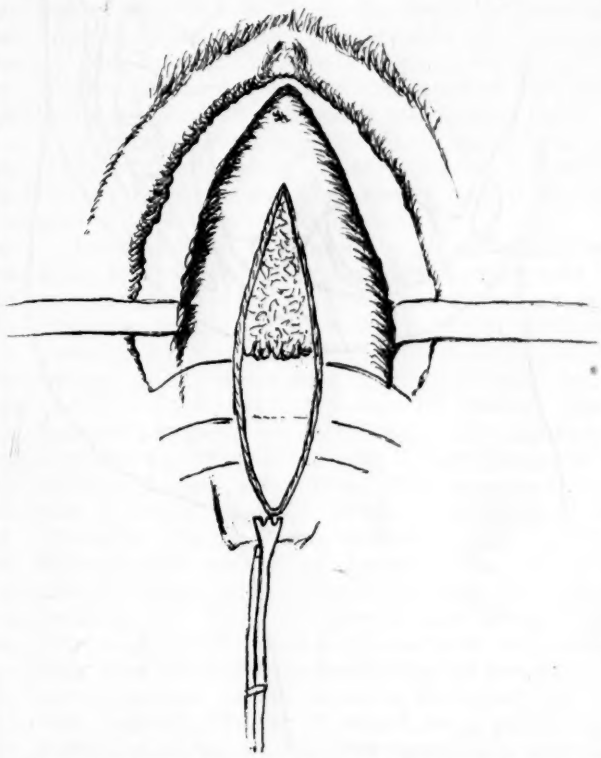

Fig. 6.—Mackenrodt's operation. Vaginal mucous membrane dissected off, sub-mucous tissue pushed up and secured, and three silk sutures in situ.

operation are indefinite and variable. Beyond a few opinions given off hand I have been unable to find any statistical information upon the subject. The operation is suitable for cases not attended by adhesions. The German gynecologists have practiced the operation but very little. Martin remarks: "The inconstancy of the round ligaments, which I have taken the trouble to establish through my laparotomies has to the present, prevented my adoption of Alexander's operation." ("*Frauen Krankheiten*," p. 98).

In 1892, Mackenrodt, of Berlin, united the body of the uterus to the anterior wall of the vagina for the purpose of correcting retro-deviation of the uterus. The operation has since been performed by other of the German operators, but chiefly by Professor Martin, and as practiced by the latter is briefly as follows: With a combination sound and tenaculum forceps, the uterus is anteverted and drawn downward and

outward, until the os is quite without the vulva. With a scalpel the anterior vaginal wall is then split from a point one-third to one-half an inch beneath the urethral opening down to the portio vaginalis. The mucous membrane is carefully dissected off from the submucous tissue for some distance on either side of the incision, the submucous tissue shoved up and its bleeding vessels stilled by several stitches of continued catgut suture. This maneuver leaves the uterine wall bare for the distance of one or two centimeters above the internal os. The vaginal wall is now united directly to that of the uterus by means of three strong silk sutures, the first of which passes through the uterine wall about three-fourths of an inch above the internal os, the second at the internal os, and the third about the middle of the uterine neck. Superficial catgut sutures close the spaces between the silk sutures. The silk sutures are allowed to remain *in situ* three months. There is no doubt a possibility of injuring the bladder in performing this operation. The injury may be either direct or through subsequent inflammation of the tissue between the uterus and the bladder. I saw in Landau's Clinic, in Berlin, one such case. There was extreme sensitiveness and other evidences of vesical inflammation. The patient had been operated upon by Dr. Vogel several months before.

Fig. 7.—Mackenrodt's operation. Sectional view. V, anterior vaginal wall bent upon itself and secured to uterus. Upper part of vagina distended.

The operation is new and therefore its value is unknown. Martin has great hopes of its efficiency and says he has had no complications following it. In the first thirty of his cases pregnancy afterwards twice supervened and ran a normal course. Mackenrodt mentions one normal pregnancy in his cases. It is quite probable that this operation, like all other new operations, will be illy done and overdone. As a result we shall have much conflicting testimony as to its value.

INFLAMMATION AND MICROBES.

A LECTURE

BY JOHN D. KALES, M.D.

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A complex but interesting series of phenomena are known to take place when certain living vegetable cells invade an animal tissue and compete with its living units for nutrition. The life and well being of invading bacteria usually means death to the neighboring tissue cells. This issue is resisted most vigorously by those cell elements immediately concerned in protecting the organism. In the more simple forms of life these influences are less complex and are confined to so-called immediate effects, while in the human organism we have not only the immediate but also the remote influences of active efforts at resistance. It is evident that the more complex the organism the more multiple and intricate will be these manifestations. A complex and highly differentiated organism has a temperature regulating mechanism which is easily deranged. It has numerous organs whose secretions and functions may be altered, a highly developed nervous system which responds quickly and often violently to unusual impressions. Then taking the human organism as a type of the most complex, we will note not only the immediate or local effects of an inflammation, but also the remote or general effects. These latter may be even more striking, comprising as they do, a series of reflex phenomena like convulsions, fever, changes in the secretions both qualitatively and quantitatively from the skin, kidneys, salivary glands, etc.

Of late, investigations regarding inflammation have been made comparatively. Metschnikoff's studies of what we might call the evolution of inflammation, have been the most notable contributions ever made to the subject. They demonstrate the potency of studying a subject comparatively. Such study has shown that the lower forms of animal life exhibit the inflammatory phenomena, and what is most interesting to the student they express it in its lowest and simplest terms. As we advance to the vertebrates and rise to the mammalia, one accessory after another is added, until the phenomena as manifested in the human species is seen. By thus studying the evolution of a complex process, we are enabled to give to its various phases their respective values. Values that may be founded upon duration, persistence or fundamental characteristics. Phagocytosis is the most persistent and fundamental phenomenon seen in the comparative study of inflammation.

To define inflammation is perhaps a useless proceeding, unless we can make the definition a basis or text for its analysis. Briefly, we might present it in the following words as: A *reaction* which living tissues exhibit to *irritation* or *injury*. According to this view the more obscure portion of the subject turns upon the significance of the word *reaction*. The expression, *irritation* or *injury*, conveys a clearer im-

pression to the mind, and bacteria become linked with the subject at this point. The reaction process belongs to living cells and may be divided into a *defensive* and *constructive* stage. The latter might not be called inflammatory in a strict sense of the word. However, the end and aim of the defensive process is to arrive finally at the constructive. In a given wound there may be much or little to defend but the leucocytes are poured out notwithstanding; if not needed for defense they proceed immediately to construction. Defense and construction are supplementary in a process which aims ultimately at restoration. In both steps the same elements, leucocytes and phagocytes play their parts.

So far as defense is concerned, phagocytosis is the most active and striking phenomenon. It is observed in the lowest and slightly differentiated forms of life, as well as in the highest. Comparative study shows that phagocytosis is less active in man than in the lower animals. A high degree of tissue differentiation evidently makes phagocytes less numerous or renders them less effective. This is perhaps one of the sacrifices the human and other highly differentiated species have to make for the advantages of possessing highly specialized tissues.

The next step in the defensive process differs from phagocytosis, inasmuch as it is only seen and studied in the more highly organized forms of animal life. It is in fact a concerted activity, a combination of forces whereby millions of phagocytes and leucocytes do through organization what a single one would do in simple phagocytosis. Instead of one by one englobing bacteria, they by concerted process surround the lot. Thus we get the so-called circumscribing action or union of forces with one intent. By it the contest is made to take place within boundaries. This circumscription is in fact a measure of last resort, simple phagocytosis having failed. The end to be attained here is the formation of an abscess. The inflammatory products and irritant materials are hemmed in by the so-called pyogenic membrane or wall extemporized for the purpose of limitation. The very natural result of this confinement is the production of those classical symptoms of inflammation, pain, heat, redness, swelling, and loss of function. These symptoms appear more or less prominently according to the results of the defensive process. The contents of an abscess consist of serum, leucocytes, phagocytes, bacteria and chemic toxins with possibly some fibrin and tissue *débris*. Clinically this material is known as pus. In the formation of the typical abscess, the aim is one of limitation. An abscess is in a measure destructive, but the damage is confined, and thus the sacrifice of a part is made often for the benefit of the whole organism. The circumscribing action is less necessary on surfaces; it does at times occur and is then marked by a barrier of deep induration.

The defensive process has been seen to consist in a phagocytosis and a circumscribing action, but the same call which summoned the leucocytes to the defensive, leaves them upon the site of injury for the purpose of reconstruction. Defensive and constructive activity seldom go hand in hand; they follow one another, but the way must always be cleared before repair can begin. Construction takes place also with the help of the fixed connective tissue cells and it occurs promptly, providing the energy of the tissue cells has not been entirely exhausted in the defensive struggle. Construction implies organization or regeneration. It has been stated that specialization or the higher evolution of the tissues of an organism was accompanied by a diminution of phagocytic activity, so the same higher development entails a feebleness in the regenerative or reconstructive function.

We have therefore to consider the human organism as having purchased its higher development at some considerable cost, it being in consequence provided with less active phagocytes for defense and less active leucocytes for construction. In the lower animal kingdom the regenerative function is so active that not only are injured organs successfully repaired, but lost limbs and processes are reconstructed. A lobster having lost his claw can grow a new one. The tadpole may regenerate a lost tail, etc.

In man, mesoblastic or connective tissue almost monopolizes the regenerative function. It is the one tissue that has suffered the least differentiation. Phagocytes and leucocytes are derived from it, and are very largely the agents through which it works. In man a wound or loss of substance of the liver or brain is replaced by fibrous or mesoblastic tissue; the liver or brain cells are too much specialized to be capable of self repair. Observation on all the other tissues of the human body shows a striking feebleness in this regenerative capacity.

Having defined inflammation as a reaction which arose from an irritation or injury, we have now to investigate this irritation. Primarily we can conceive of irritation or injury only as arising from mechanical, chemical or thermal causes. Considering chemical causes only, these may operate directly or indirectly. When *directly*, it can be proved that inflammation may arise through, for example the application or injection into living tissues of some chemic irritant, germ free. This process is chiefly one of experimental interest. The mode of introducing a chemic toxin *indirectly* into the tissues through the agency of bacteria has the widest clinical significance. The direct mode is often misleading, for the direct use of any chemic irritant creates in living tissue a *locus minoris resistentiæ* and may thus ultimately induce bacterial invasion. The direct method should, however, have nothing to do with bacteria, though it would be a purely chemic matter whether we injected aseptically into living tissues croton oil, turpentine or phlogosine, an alkaloidal product of certain pyogenic organisms. If these substances are used we get substantially the same result as in microbic inflammation, though without microbes we miss their peptonizing action which yields the typical fluid pus, while that called forth by chemic irritants is more or less coagulated and semi-solid. It has been called puruloid by some writers.

Clinically, bacteria acting as agents for the generation of toxic and irritant material, are by far the most frequent causes for inflammation. Their products are the acting or exciting causes and these are usually alkaloidal or belong to that class known as albumoses or toxalbumens. Hence they fulfill the idea that the irritant must be a chemic one. The mechanical influences of bacteria were at first given considerable prominence, but later and more careful investigation, has shown this to be too inconsiderable to notice. Even in so severe a disease as septicemia, mechanical effects account for nothing.

And again the idea that bacteria simply deprive the tissue cells of their accustomed oxygen and food has been shown to be of altogether minor importance. The action of certain bacteria for harm is an aggressive and strictly positive one.

In certain forms of chronic inflammation, as for example, the interstitial inflammation of solid organs like the kidneys, liver, spinal cord, etc., there exists an overgrowth of the connective tissue framework. There may at first be hypertrophy of the whole organ as is often the case in the early stage of chronic interstitial hepatitis. This is soon followed by an atrophy and degeneration of the functional cells, which advancing more rapidly than the formative process in the framework leave the organ finally much contracted. Contracted, moreover, because of the property of the new-formed connective tissue to shrink after the manner noticed in cicatrices. Such conditions as these, if they are rightly called inflammatory, and it would seem best to call them so, are brought about usually by some chemic irritant whose influence is exerted upon the tissues during a long period of time. Such chemic substances usually act directly upon the living cells. They may be the products of some recent bacterial invasion like diphtheria or more remotely syphilis. Again, they may have nothing to do with microbes, and be the products of the living tissue itself, *e. g.*, uric acid in the lithemic or bile in the cholemic conditions. Finally, it is seen that substances derived from without are equally capable of producing interstitial change, *e. g.*, the prolonged use of alcohol and the effects of chronic lead poisoning.

The influence of these irritants are in the above instances just enough to provoke connective tissue proliferation, while they damage the more highly specialized or functional cells of an organ.

Once more it is seen that higher organization has its disadvantages, in that it ultimately gives rise to cells whose resistance to detrimental agencies are inversely proportioned to their degree of evolution or specialization. A highly specialized cell does better work than one less evolved, but as a compensation it needs greater protection, for it succumbs very readily to harm and there is left little or no prospect of restoration.

We know of large numbers of pathogenic bacteria but they do not all excite inflammation. Inflammation is in many cases a protest on the part of tissues against the toxins of an invading organism. Unfortunately, perhaps, there are some bacteria and toxins that provoke no tissue protest. It is well known that there are many toxic alkaloids that create no inflammatory reaction; *e. g.*, aconite, strychnin, morphin, atropin, etc. The toxins of hydrophobia and tetanus call forth little or no defensive action on the part of the tissues. Very susceptible animals may offer little or no inflammatory reaction to anthrax; thus in man we have occasionally acute miliary tuberculosis. Both illustrate conditions where there is no local protest or circumscribing action, but as a consequence a quick, general, systemic invasion. The insidious character of an infection without distinct local inflammatory manifestations is often seen in syphilis. The local lesion being occasionally too trifling to notice. Man, for example, is not very easily infected with anthrax, hence we expect a vigorous local reaction, and this is usually the case in malignant pustule.

Infection may take place with or without resistance, but inflammation never occurs unless resistance is offered. As tissues approach death their inflammatory vigor diminishes at an equal rate. In all inflammation, antagonism is necessary. Cell antagonism is most typically exhibited toward living microbes, and less toward toxins and chemic irritants.

THE CENTRIFUGAL MACHINE IN SPUTUM EXAMINATIONS.

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Owing to its precision, the diagnostic aid given by a microscopic examination for tubercle bacilli of the properly stained sputum has made this procedure very popular. The only difficulty lies in the fact that, by the old methods of examination, we may sometimes unconsciously select a portion of the sputum that contains no tubercle bacilli, if the entire specimen contains but few.

To eliminate this source of error, I have of late been using with much satisfaction the method advocated by Biedert, employing in addition the centrifugal machine. Where possible, I secure all the sputum raised in twenty-four hours, and add some potassium hydrate solution; this, with the aid of heat, dissolves any lumps that may be present and after a time the mixture becomes quite thin. It is then diluted with water so as to lower the specific gravity, and introduced into a large centrifugal machine. The latter is then run at a high speed for a half hour, which throws down all solid particles, bacteria included; and the specimen to be examined is then taken, by means of a pipette, from the bottom of the conical part of the tube.

I report the following case to show the usefulness of this method:

About a year ago I saw, with a colleague, a dispensary patient of his, Miss M. F., aged 18, who had been suffering for some time with a cough, with slight watery expectoration. At times she had sweats which were not profuse and did not occur often. Temperature 99; pulse 92; tongue coated white. She was anemic, but not emaciated. Both parents were living. She had originally come for a tonic, because her friends told her she looked pale. Happening into his room at the dispensary one day, my friend casually asked me what I would give, as she had not improved under treatment.

Upon hearing the history, I asked for and received permission to examine her chest. The only abnormal physical signs were on the right side where there were some mucous râles, and near the apex I heard a slight pleuritic friction sound, but it was so slight I did not succeed in convincing my friend it was there. The girl admitted that she sometimes had pain in that region, "muscular rheumatism," she called it. Neither of us could detect any consolidation.

Dr. —— was positive that there was nothing tubercular about the case, as he had examined the sputum himself. However, as we were both greatly interested in the subject of tuberculosis, he secured another (morning) sample of sputum, and we examined it together at my laboratory. Out of eight slides examined, we found two tubercle bacilli, both of which were in the second preparation. Dr. —— insisted that these might be an accidental contamination from

the air, so to decide the question he obtained all the sputum of twenty-four hours, which I subjected to the above process. Result, the first and only specimen examined contained seven tubercle bacilli in one field, and several fields contained four or five.

Two months later, I subsequently learned, during which she had greatly improved on codliver oil and a highly nitrogenous diet, this patient had a fall, striking her chest against a pail; this started up an acute form of the disease from which she died six weeks later.

While this is only one case, it is still a significant one, as the method of examination cleared up the existing doubt, and led to the adoption of a course of treatment that would probably have been successful had not the girl met with the unfortunate accident which we both felt satisfied caused the disease to assume its virulent form.

Where the bacilli are easily demonstrable by the ordinary means there is no call for this method; but since the above experience I should hesitate to say that a given specimen was not tubercular until it had been applied.

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POST-NASAL HYPERTROPHY IN ITS RELATION TO HAY FEVER AND OTHER DISEASES.

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The ganglionic system presides over the functions of secretion and excretion, nutrition and circulation, as well as involuntary motion. These ganglia, composing the "sympathetic system," also give warning through their intricate network of connecting nerve fibers, of abnormal conditions. The warning may be sent to the same organ in which the irregularity occurs, or it may be sent to a neighboring organ, or to one quite remote. The correlated action of organs and tissues is fairly well worked out. Diseases apparently neurotic in origin have frequently been proven to depend upon some local irritation. It may not be possible in every case of a certain disease to find the local origin, or to remove it when found, but it should at least be looked for before valuable time is wasted in treating symptoms.

Dr. J. N. Mackenzie has described what has been termed "Mackenzie's sensitive area," *i. e.*, the posterior ends of the lower turbinated bodies and the surface of the septum opposite. The sensitive area of the turbinated body is usually hypertrophied and may be called the sensitive hypertrophy. It may be seen in most cases by posterior rhinoscopy, having a granular appearance, pale and large. The shortest branches from Meckel's ganglion supply this area. Stimulation or irritation of this area through these branches and the irritable ganglion may be reflected in any or all of the ways mentioned; for example, to the nose producing congestion and discharge; to the eyes producing itching of the eyes and lacrymation; to the bronchial tubes producing asthma. This tissue becomes very sensitive to sudden changes of body temperature, receiving a portion of the blood driven from the surface, swelling enormously, and absorbing septic germs, which set up a new attack of rhinitis, commonly termed, "catching cold." This granular hypertrophy is also irritated by odors, dust and pollen of ragweed or other plants. The impression made on the ganglion is reflected through its various branches, producing in turn the symptoms of "rose cold" or hay fever; through the descending palatine branches, causing itching of the roof of the mouth, most often referred to the point where the nerve emerges from the posterior palatine foramen, as well as through the naso-palatine nerve at the anterior palatine foramen behind the incisor teeth; through the internal nasal branches, causing engorgement of the erectile tissue with the profuse discharge of mucus; through the upper posterior branches, the pharyngeal, and a few branches from the vidian nerve to the mouth of the Eustachian tube and pharynx, producing the itching of the ears and throat, tinnitus aurium and pain in the ears; through the branches to the ophthalmic ganglion, producing the intense eye symptoms observed in many cases; through the branches of the fifth nerve, producing different neuralgias in its domain; through the cervical sympathetic ganglion, producing hay asthma and dyspnea. Thus the symptoms of hay fever are shown to be dependent on the distribution of the branches from Meckel's ganglion, and its connections, irritation of which results from this sensitive hypertrophy. In the milder cases of hay fever, the symptoms of asthma and dyspnea may be entirely absent, as the reflex action is not so intense and does not extend to the more remote organs.

Again, some of the most intractable cases of asthma are cured by removal or cauterization of these hypertrophies, removal of polypi or other intra-nasal irregularities which irritate this sensitive area.

It may be said, then, that in cases of tendency to "catching cold," hay fever and asthma, the cause is local in a great many cases, and as a local lesion it should be treated. After the local irritation has been removed and the symptoms still remain, then it will be time to look for the origin elsewhere. According to Dr. W. H. Daley, we are justified in looking upon hay fever as a pure neurosis only when the affection persists after the removal of the local nasal disease.

In the case of hay fever, it is said by many authors that local treatment of hypertrophy or other diseased conditions of the nasal mucous membrane will cure a great many cases. The statement is too general to result in much good to the patient. When every abnormal condition discoverable by anterior rhinoscopy has been corrected, including Sajous' sensitive areas, and hay fever develops as before, then examine posteriorly, remove the granular hypertrophy and the case recovers during the same season. The intensity of the symptoms is hardly any reduced by anterior treatment and the result is that the patient becomes disgusted and believes what others have told him,—that hay fever can not be cured.

Also, a great many of the worst symptoms of catarrh are quickly relieved if its treatment begins posteriorly. The chronic congestion of the turbinals subsides, as well as the profuse discharges. The bodies are then left to their proper sympathetic influences which regulate secretion of fluid and the other functions of the nasal mucous membrane.

It has been shown that when simple hypertrophy is the cause of the nasal obstruction and the bodies are cauterized deeply, their contraction is often so great that inspired air is not properly warmed and moistened, the throat becomes dry, and the larynx is involved, in which case it is a question if the patient is not in a worse condition than before. In catarrhal

conditions not hypertrophic, deep and destructive cauterization is never necessary and does actual harm. All these results are easily avoided by the removal of the source of irritation to the sympathetic ganglion before any further measures are attempted. A great deal of time will be saved to the patient, and satisfactory results obtained, if the treatment is carried on with a proper idea of the sympathetic influences reflected through the spheno-maxillary ganglion. Simple "hypertrophy" or engorgement is not pathologic but reflex. I believe that deep linear cauterization for the purpose of button-holing the membrane to the bone and thus prevent erection of the turbinated tissue is wrong in theory and barbarous in practice.

I have frequently seen patients who have been treated and cauterized freely for a period of two or three years, until they had concluded that there was no benefit to be derived from the treatment of catarrh and that this so-called radical treatment was also a failure, and who assured me that the only pronounced improvement they had ever obtained was from treatment of the posterior ends of the lower turbinated bodies.

This sensitive area of Mackenzie is also a causative factor in the production of migraine in a certain class of cases which I will describe, and possibly in others. It is well known that stimulation or irritation of one spot or nerve, through correlated action, produces vasomotor dilatation of another spot or organ. The theory of the correlated action of the erectile tissues of the body has been pointed out in an article on "Irritation of the Sexual Apparatus as an Etiologic Factor in the Production of Nasal Disease," by John Mackenzie. He shows that in a certain proportion of women with healthy nasal organs, engorgement of the turbinated erectile tissue occurs at each menstrual flow. This physiologic sympathy becomes painful when the congestion of the turbinals is accompanied with migraine. In two cases of this menstrual migraine under my care, cure resulted from the removal of the sensitive hypertrophies, and what was supposed to be entirely beyond the reach of more than palliative treatment was shown to be easily remedied. The philosophy of migraine may be explained by the action of the sensitive hypertrophy on the ganglion, producing pain through the connecting branch to the sensitive fifth cranial nerve. As a source of irritation to the nervous system and to the tissues of the respiratory tract, these sensitive hypertrophies are of the greatest importance and should be recognized and treated.

In the treatment of these hypertrophies, all anterior obstructions should be removed, such as polypi deflections and hypertrophies, if necessary, in order to gain easy access to the post-nasal regions. It is understood that the parts are to be brought under the influence of cocain for the double purpose of an anesthesia and widening the view. After an application of chromic acid with a bent probe, the white and flabby body can be moved about and brought easily into view. There will be increased discharge during the healing process, but from two to four weeks after the operations have been completed, the pharynx is entirely free from the troublesome collections of mucus. If there is laryngeal irritation, it also improves for the same reason. There is usually no pain after the acid treatment and no constitutional disturbance, but often there is immediate improvement. The electric cautery is hardly applicable, except as a cautery snare; for the reason that it can not be handled with sufficient delicacy of touch. No instrument is so little in the way and so easily handled as the silver probe charged with chromic acid. No application of acid or snare can be made unless there is easy access. I prefer the use of the cold snare when the growth is large enough to engage the wire, and if tightened slowly there is no great amount of hemorrhage. When the growth is not so large, or if for any other reason an acid application might seem preferable, a steady nerve and a knowledge of the topography of the parts is necessary to make an accurate cauterization.

Case 1.—Mrs. F., aged 35, has suffered from hay fever regularly since 1891; attacks modified or absent while in Mackinaw. Has also had severe asthmatic attacks for past two winters, "constantly catching colds" and very miserable. Examination showed the posterior ends of the lower turbinates to be very large and sensitive. They were removed with the cold snare last July. During the season just passed she had no symptom of hay fever, and up to the present time has had no symptom of asthma or the usual attack of rhinitis. During the year before, the turbinated bodies had been extensively cauterized from before back, but the posterior sensitive hypertrophies had not been touched and the previous season the attack of hay fever was not modified.

Case 2.—Mr. S., aged 40, has had hay fever for the past eight years; also suffered from asthma most of the time. At the beginning of the past season came for treatment, having the symptoms of a very severe attack of hay fever. The treatment was begun with chromic acid cauterization of the posterior sensitive hypertrophies, one side at a time. The improvement was immediate on the side first treated, then also on the other side after its treatment. The asthma gradually improved and has since entirely disappeared. There was also a ledge on the left side of the septum which was removed. Anterior hypertrophies were some snared and others cauterized. The recovery from most of the symptoms was immediate after the use of chromic acid.

Case 3.—Mrs. P., aged 42, has suffered from terrific migraine for about three years, mostly at menstrual periods, although at times from over-exertion, excitement and other irregularities of habits. Examination, in March, 1894, showed enlarged posterior hypertrophies as well as hypertrophy anteriorly. The posterior hypertrophies were treated first, followed by anterior treatment with the result of entire cure.

I might report more cases of the same sort, but these will suffice to show that Mackenzie's sensitive area and the sympathetic nerve supply of the nose have more to do with the most distressing symptoms of catarrh, hay fever, asthma and migraine than they have hitherto received credit for.

ANTITOXIN IN DIPHTHERIA—RÉSUMÉ OF SOME REVIEWS.

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Report of 121 Cases of Diphtheria Treated at the City Hospital, Urban, by W. Koerte.—The first injections of serum were made in January, 1894, and were continued without interruption in all the children with diphtheria until the end of March. In consequence of a want of the serum the specific treatment was suspended until June, when it was recommenced until July 21. Then a second interval came, until the middle of September, from which time a third series of treatment with serum from the factories at Hochst-am-Main followed. The treatment, besides the use of the serum, was merely symptomatic. In all cases the diagnosis was based on bacteriologic examination. Out of the 121 cases treated with the serum, 81 were cured = 66.9 per cent., and 40 died =

33.1 per cent; that means exactly one-third of the patients. All the cases of diphtheria, treated from June, 1890, to Dec. 31, 1893, 1,160 in number—showed a mortality of 45.1 per cent. Between the periods of the antitoxin treatment (at those times when the serum could not be obtained) there was a mortality of 57 out of 106 cases = 53.8 per cent. These results, although not as favorable as those reported by Roux and Ehrlich, are apparently in favor of the value of the new remedy. For the exact estimation of these observations, however, it is necessary to divide all the cases in different classes, according to the severity of the course of the diseases. Koerte distinguishes: 1, *severe cases*, with grave intoxications. (*Prognosis dubia vergens ad malam*); 2, *moderately severe cases*, with grave local disease but without symptoms of grave general infection, (*Prognosis dubia*); 3, *mild cases*. Forty-three severe cases had a recovery of 41.8 per cent., a mortality of 58.2 per cent. Forty-seven moderately severe cases had a recovery of 70.2 per cent., a mortality of 29.8 per cent. Thirty-one mild cases had a recovery of 96.7 per cent., a mortality of 3.3 per cent.

Of special importance is the observation of the effect in children under 2 years of age. Out of fifteen children of this age seven died and eight recovered. Tracheotomy became necessary in forty-two of all the cases treated with serum, with twenty recoveries = 47.6 per cent., and twenty-two losses = 52.4 per cent. The average losses after tracheotomy, performed under the same indications before the use of the antitoxin, were 77.5 per cent. This remedy has therefore reduced this mortality by 25 per cent.

None of the children treated with the serum before tracheal stenosis was present had to undergo tracheotomy. Worthy of mentioning are the results of tracheotomy in diphtheritic patients under 2 years of age. Out of 108 children of this age who were operated from June, 1890, to March 31, 1893, only ten = 9.2 per cent. recovered, while out of eight cases who were treated with the serum three = 37.5 per cent. recovered.

Behring and his co-laborers have emphatically declared that a satisfactory result of the antitoxin injections can be expected only during the first few days of the disease. The earlier the treatment is resorted to the better the results. Koerte's figures prove the correctness of this thesis. Out of fourteen severe cases injected during the first three days, eleven recovered and only three died. In twenty-nine cases the serum could not be used before the fourth day; twenty-two of them died, seven recovered. From the moderately severe cases, who were treated early, eighteen recovered and five died, while from those cases of the same category who were not treated before the fourth day, only fourteen recovered and eight died.

Nevertheless, an early treatment does not absolutely cure all the cases. There are cases of diphtheria which produce a severe intoxication of the whole body so quickly that our treatment remains unsuccessful in spite of large doses of the serum. Koerte gives a number of clinical histories of patients, who died in spite of early treatment with large doses of serum after a short time from sepsis, broncho-pneumonia, nephritis, paralysis and heart failure. In a child, 1¾ years of age, which was brought to the hospital with an apparently mild diphtheria and injected with serum on the fourth day of the disease, the condition became worse and worse until the patient died from general infection. Bacteriologic examination, however, developed the presence of streptococci only and no Klebs–Löffler bacilli.

No disagreeable secondary effect could be observed by Koerte during his experiments with the serum. Very conspicuous, however, was the rapid improvement of the general condition following the serum treatment.

Although the reported figures seem to allow the formation of a very favorable opinion in regard to the serum treatment, Koerte seems to be rather indefinite in his conclusions. He makes the remark: "Bacteriologists say that antitoxin, if early used, will almost surely cure the *genuine* diphtheria. They wish those cases excluded which are complicated by the presence of other bacteria or cocci. In regard to this, I must say that we, as practitioners, when we talk about cure and treatment of diphtheria, must keep in view the clinical symptoms and appearance of the disease, and that under this well-known and fully characterized picture also those cases belong which are described as mixed infections. Every physician will declare such a case a severe one of diphtheria. From this point of view it is at this time not probable yet, that antitoxin will cure *all* cases of diphtheria, in a broader sense. Also the assertion that in an early and sufficient use of the serum all cases of genuine diphtheria can be cured is not proved yet. There is the possibility that in various epidemics those cases of *mixed infection* are so frequent that they make a limit for the use of the serum. In spite of the rather favorable results which I have related, a longer continued observation at the bedside only can bring a decision as to the value of the antitoxin."—(*Berliner Klin. Wochenschrift.*)

A discussion of the antitoxin was brought up at the Medical Association of Munich, after the hearing of reports of cases by Bucher, von Ranke, Seitz and Emmerich. Ranke asserts that diphtheria at Munich is usually a severe affection. Out of 1,048 cases treated during the last seven years, 49.2 per cent. had a fatal issue. In 575 cases operative interference, intubation or tracheotomy, became necessary. The operated cases had a mortality of 65.2 per cent. In December, 1893, the first observations were made with the serum. The doses used at that time were too small, and the unsatisfactory results of the first series must be declared by this circumstance. At the *post-mortem* examinations of injected children, a peculiar form of infiltrations of the lungs was observed, which otherwise is unusual in children, consequently a causal connection of these pneumonic lesions and the antitoxin was thought of; later on, Ranke convinced himself of the harmlessness of the serum, and he left the before named suspicion an open question. The number of observations with serum at the children's clinic at Munich is too small to allow definite conclusions. A series of nine children were treated with Aronson's diphtheria antitoxin. Two of them died. In another series of ten cases with only one death, Behring's serum had been used. Although these results are remarkably good in comparison to those usually observed at Munich, we are not allowed to draw definite conclusions from them. It may appear surprising that in those cases which came to *post-mortem* examinations, the local diphtheritic process had not been ended yet after twenty-two and twenty-eight days, in spite of large doses of the serum. Emmerich in his remarks laid

stress upon the observation that in all the fatal cases of diphtheria at Munich, besides the Löffler bacillus also streptococci, staphylococci or the bacillus pyogenes fetid were found. The following resolution was unanimously adopted by the Association:

1. To give a positive opinion about the value of Behring's serum is not possible at this time; especially on account of the differences of diphtheria in regard to appearance and severity of the disease, only a longer and closer observation can have a positive effect. It must be recommended, therefore, not to expect an absolute panacea, which suggestion should be given to the public also.

2. Our experiences with the antitoxin are of such a kind that we consider it worthy of further investigations and trials, especially in clinical and polyclinical institutions, as those places the most fit for such experiments.—(*Munchenez Med. Wochenschrift.*)

Disagreeable After Effects from Antitoxin.—Dr. Cuyrim, physician-in-chief to a hospital at Frankfurt-on-Main, published in the *Deutsche Med. Wochenschrift* the cases of his two assistants who both had used the antitoxin on themselves for light angina—the one of a diphtheritic, the other of a merely catarrhal nature. In the first case, the disease disappeared quickly, while convalescence was rather slow. Six days after the last injection (two had been made of 10 c.c. each) an itching urticaria-like eruption was observed at the region of the injections. The temperature was raised again to 39.5 Celsus. Swollen and painful glands were found on the neck, under the maxilla, at the elbows and inguinal regions. Headache and general feelings of sickness and discomfort. On the third day, pain in knee and elbow joints, muscular pain and the feelings of severe sickness were observed. Besides the urticaria, small, red non-itching spots were found at various parts of the body. It was not before the eighth day that all these symptoms and fever disappeared. Convalescence slow.

In the second case, the patient had taken only one injection. On the following day the place of injection was painful, the ability of walking was rendered difficult. Three days after the injection, loss of appetite, sleeplessness, weakness and a peculiar sensation in the limbs were observed. Two days later, severe pain of the neck, temperature 39.1 Celsus, disagreeable itching at the place of injection and at other places, swollen glands, sensation of severe sickness. On the sixth day of the disease, paresthesia in both hands was noticed, likewise pain in both arms, which troubled the patient badly. After the disappearance of all other symptoms this pain continued and was still present after fourteen days. Cuyrim positively traces these symptoms to the antitoxin. The injections had been made strictly aseptic.

We find another case of secondary effect from the antitoxin, published by Lublieski in the *Deutsche Med. Wochenschrift.* A child of 8 years with diphtheritic affection of the nose and throat received three injections of Behring's serum No. 1 (600 units). The local disease disappeared quickly and without trouble. Eight days after the first injection, swelling and redness of both foot joints, especially at the dorsum, was observed. On the following night an eruption like measles came out at the legs and arms, pain at knee, elbow and foot joints set in. Temperature 38 Celsus in the evening. The fever was still increased during the next few days, likewise the pain of the joints. The child was apparently rather sick. On the fourth day of the disease, the temperature reached 40.3 Celsus, the eruption appeared also on the swollen face. Slow recovery.

Four other cases of an urticaria-like eruption and pain of joints and muscles after the injection of antitoxin in diphtheria were observed and published by Scholz in the *Deutsche Med. Wochenschrift.* All these after effects were of a light nature, disappearing in three or four days.

Prophylactic Inoculatious with Serum.—In a meeting of physicians of Alsace, held October 27, Dr. Wick reported that he had made prophylactic inoculations in ten children of different families, in which he was treating cases of diphtheria. Children over 6 years old received 2 c.c., younger ones 1 c.c. of the serum. Out of these children, two were taken sick on the fifth, and one on the sixth day after the injection with very mild diphtheria. Bacteriologic examination proved the presence of the Löffler bacilli.

At Königsberg, sixty-four children in thirty-five families were inoculated by the University Policlinic as a prophylactic measure. In the beginning ½ and later 1 c.c. was injected. The diagnosis was based on bacteriologic examination in the diseased brothers or sisters. Out of ten children, inoculated with Behring's normal serum, No. 1, four had diphtheria: out of eight inoculated with the six-fold Aronson serum, none; out of eighteen inoculated with the thirty-fold Aronson serum, two, and out of twenty-eight inoculated with the sixty-fold Behring serum, one became diseased. All the cases which were taken sick after preventive injections recovered and had the disease in a mild degree. (*Deutsche Med. Wochenschrift.*)

ORIGINAL INVESTIGATIONS ON THE NATURAL HISTORY, (SYMPTOMS AND PATHOLOGY) OF YELLOW FEVER. 1854–1894.

BY JOSEPH JONES, M.D., LL.D.
NEW ORLEANS, LA.

(*Continued from page 169.*)

CHAPTER IV.

Case 12.—Yellow fever. Wm. Thompson; age 23; native of Germany has been in Louisiana eighteen months. Taken sick in the country with intermittent fever; returned to the city after a few days; was seized with a violent chill, followed by continued fever until day of entrance into the hospital. Large muscular man; blacksmith by trade. Entered Charity Hospital October 27. Patient had been in bed twenty-four hours with fever before entering hospital.

Date.	Pulse.		Resp.		Temp.	
1873	M.	E.	M.	E.	M.	E.
Oct. 27	. . . .	104	. . . .	28	. . . . .	104.2°
" 28	88	98	28	29	104 °	105 °
" 29	86	88	26	26	103 °	105 °
" 30	98	96	39	22	103 °	104 °
" 31	80	86	28	30	102 °	102.5°
Nov. 1	82	86	36	32	102.5°	102.8°
" 2	82	94	34	40	102 °	104 °
" 3	92	99	43	38	103.2°	103 °
" 4	90	94	34	40	100.5°	101 °
" 5	106	104	40	50	102.5°	102 °
" 6	106	118	36	38	102.5°	103.8°
" 7	126	129	35	56	100 °	104.2°

REMARKS.

October 27.—Was much excited; face flushed; gums red; tongue furred; eyes injected, hemorrhage from gums; some headache; cannot bear the gas light; great thirst; ice in small fragments, milk and brandy diluted with seltzer water.

October 28.—Did not sleep during night; relieved the bladder by the catheter; urine scant and high colored, loaded with albumen; ordered sulpho carb. of sodium 3ij in 6 powders, one powder every three or four hours.

October 29.—Did not sleep during night; restless; skin dry; great pain in region of kidneys; no urine is passed; ice cold injections caused the excretion of a very small quantity of light-colored urine loaded

with albumen. Hemorrhage from the gums profuse, also free epistaxis; patient greatly alarmed and restless.

October 30.—No improvement: takes little milk and seltzer water and brandy; skin is still dry; tongue dry and bleeding.

October 31.—Patient has not slept at all and is in a state of low delirium; passes his urine and feces in bed; lies in an apparently insensible condition, but taking nourishment in small quantities when forced upon him.

November 1.—No change, except for the worse; still in an unconcious state; low muttering delirium; cannot collect any urine; passes the small amounts in bed; severe hemorrhage from stomach and lungs; expectorates blood.

November 2.—No change; in same condition.

November 3.—Loud stertorous breathing; hemorrhage; blood still runs out of his mouth.

November 4.—Continues to grow worse; body emits a horrible stench; expectorates blood; blood oozes from nostrils and gums.

November 5.—Wild delirium, requiring two men to hold him in bed.

November 6.—Continues in state of wild delirium.

November 7.—Sinking rapidly; died 1 a.m., morning of Nov. 8, 1873, with profuse hemorrhage.

Post-mortem Examination.—Eight hours after death. Body of a deep golden color; mouth full of black vomit, which trickled down the side of the body; bladder contained not more than ʒij of light-colored urine; stomach was filled with black vomit, and capillaries were congested; kidneys congested and mottled; liver of a nutmeg color and oily when first seen, when washed and exposed to the air sections of the liver presented a true yellow color; had yellow flabby and fatty old adhesion in right lung; blood thin and watery. All organs showed capillary congestion. Gall bladder contained but a small quantity of bile.

Case 1.—Yellow fever, complicated with pneumonia. Wm. Thompson, large muscular man, blacksmith by trade; age 22; native of Germany. Entered Charity Hospital, Ward 13, Oct. 27, 1873. Has resided in Louisiana eighteen months. Went out to Bayou Têche to work on plantation; after remaining there two weeks, returned to the city, and after being in New Orleans one week, was taken with a slight chill, followed by fever October 27, the day upon which he entered the hospital. The following is the record of the pulse, respiration and temperature:

Date.	Pulse.		Resp.		Temp.	
1873	M.	E.	M.	E.	M.	E.
Oct. 27	. . . .	104	. . . .	28	. . . . .	105.5°
" 28	88	98	28	29	104 °	105 °
" 29	86	88	26	26	103 °	105 °
" 30	98	96	39	22	103.5°	104 °
" 31	80	86	28	30	102 °	102.5°
Nov. 1	82	86	36	32	102.5°	102.8°
" 2	82	94	34	40	102 °	104 °
" 3	92	99	43	38	103.2°	103 °
" 4	90	94	34	40	100.5°	101 °
" 5	106	104	40	50	102.5°	102 °
" 6	106	118	36	38	102.5°	103 °
" 7	126	121	35	56	100 °	104.2°

REMARKS.

October 27.—Very much excited; face flushed; eyes injected; gums red; cannot bear gas light; hemorrhage from gums; entered evening of October 27; pain in head and back; hot skin; restless; anemia.

October 28.—Tongue very red at tip and edges; bled from nose at 1 p. m. and 7.30 p. m.; complains of some pain in forehead, lumbar and epigastric regions and extreme capillary congestion; foul breath and odor.

October 29.—Complains of intense headache and sleeplessness; epigastrium tender upon pressure and painful; great pain in region of kidneys; suppression of urine.

October 30.—Albumen and casts in urine; jaundice; capillary congestion; did not sleep during night; hemorrhage from gums.

October 31.—Jaundice; capillary congestion; prostration; suppression of urine; ice cold injections cause the passing of some urine loaded with albumen.

November 1.—Intense jaundice.

November 2.—Profuse bleeding at nose; blood oozes from tongue and nose; dullness upon percussion of lower lobes, both lungs; embarrassed respiration.

November 3.—Bloody sputa; blood oozes from gums.

November 4.—Bloody sputa and bleeding gums.

November 5.—Bloody sputa; blood oozes from tongue and gums and nose.

November 6.—Bloody sputa; blood oozes from mouth and nose.

November 7.—Bloody sputa; died at 12 p. m.

NECROPSY TEN HOURS AFTER DEATH.

Body still warm; limbs, face and trunk full; surface of deep saffron yellow color; intense jaundice; lower dependent portions of head, neck, trunk and extremities mottled with dark purplish ecchymoses. Black vomit running out of corners of mouth. Thorax: Heart firmer and more contracted and of not so decided a yellow color as in uncomplicated yellow fever. Under the microscope, however, the muscular fibers were loaded with granular matter and oil globules. The pericardium contained two fluid ounces of yellow serous fluid. The right auricle contained a golden-colored clot, attached to the auriculo-ventricular valve. The formation of the clot appeared to be due to the supervention of the pneumonic inflammation. The lungs were congested; lower lobes of both lungs solidified, in state of gray hepatization and infiltrated with bloody purulent fluid. In the blood from the cavities of the heart, the majority of the colored blood corpuscles were normal in appearance; some were crenated and stellate in shape. No bacteria or vegetable or animal organisms were observed in the blood from the heart. Abdomen: Liver mottled upon surface, yellow and purple and bronze. Gives evidence of pervading malarial disease. The yellow fever deposit of oil globules and yellow granular matter was very evident in many portions of the liver. Under the microscope the liver was loaded with oil globules and granular matter and also contained black pigmentary matter. Gall bladder relaxed and apparently empty, contained about thirty grains of thick deep green, almost black, ropy liquid, which under the microscope was found to consist of desquamated liver cells, granular casts of the biliary tubes, and cells from the walls of the gall bladder, discolored by the coloring matter of the bile. The bile in cases complicated with malarial fever, presents a deep green color. Walls of gall bladder greatly congested and of deep purple color. Spleen enlarged to about twice the size and contained pigment particles. Kidneys congested; when washed, of deep yellow color. The bladder contained small quantity of golden urine, loaded with albumen casts and cells of tubuli uriniferi. Stomach and intestinal canal congested. Mucous membrane of stomach deeply congested.

Case 2.—Yellow fever; jaundice; severe pain in heart; slow pulse; death. James H. Campbell; age 48; native of New York; has resided in New Orleans twenty-two years; occupation, carpenter. Seized with pain in head, followed by fever Oct. 17, 1893. Entered Charity Hospital October 21.

Date.	Pulse.		Resp.		Temp.	
1873	M.	E.	M.	E.	M.	E.
Oct. 21	. . . .	. . . .	. . . .	28	. . . . .	103.5°
" 22	90	94	26	30	102 °	103.5°
" 23	80	80	34	30	100.1°	100 °
" 24	77	78	30	26	99.2°	100.1°
" 25	80	82	28	27	101.7°	103 °
" 26	95	100	28	30	101 °	104 °
" 27	. . . .	. . . .	. . . .	. . . .	101 °	. . . . .
" 28	60	56	42	40	99 °	99 °

REMARKS.

October 21.—Conjunctiva and skin very yellow; tongue red at tip and edges, coated and deeply furred in center; gums very red; patient emits a highly offensive odor.

October 22.—Jaundice, nausea and vomiting; bowels moist; very offensive smell emitted by patient; respiration rapid and panting; dull and drowsy.

October 23.—Patient complains of intense pain in the region of the heart, expressive of fright; in the evening partial suppression of urine; ice cold water administered by enema.

October 24.—During this and the preceding day the tongue and mouth have been so dry that the tongue is protruded with great difficulty; tongue furred and cracked; very red at tip and edges; intense jaundice; tongue swollen; speaks with great difficulty, dull and lethargic; urine contains albumen, granular casts and detached cells. Ice water injections into rectum has caused free secretion of urine.

October 25.—Tongue swollen, cracked and bleeding; jaundice intense; upper surface of tongue red and furred, under surface purple.

October 26.—There has been a marked rising temperature.

October 27—Complains of intense pain in right hypochondriac region; countenance anxious and disturbed; jaundice.

October 28.—Pulse slow, only 56 per minute.

Died Oct. 28, 1873, two or three hours after the last observation. Died with slow pulse, low temperature and rapid respiration. This patient entered in a state of intense jaundice and great prostration. Pulse so slow that it could not be counted.

Case 3.—Yellow fever; jaundice; urine contained albumen; rapid pulse; death. A. L. W.; native of Ireland; age 20; sailor; in port one month. Taken sick October 22, and was sent to the Charity Hospital three hours after beginning of illness. October 22, 1874, 8 P.M., pulse 125, respiration 35; temperature of axilla 104.2 degrees. October 23, urine contains albumen and casts; congestion of capillaries; face

very much congested; tongue red at tip and edges, furred in center; gums swollen and very red; great tenderness of epigastrium on pressure; 8 P.M., pulse 118; respiration 30; temperature 102.2 degrees; 8 P.M., pulse 120; respiration 32; temperature 104.1; urine loaded with albumen and casts; very scant. October 24, nausea and vomiting black vomit; can retain nothing on his stomach; 8 A.M., pulse 105; respiration 26; temperature 101.5 degrees; 8 P.M., pulse 102; respiration 25; temperature 102.4 degrees; urine scant, could collect but one fluid ounce; loaded with albumen and casts; black vomit continues. October 25, 8 A.M., pulse 96; respiration 24; temperature 100.2 degrees; 8 P.M., pulse 107; respiration 26; temperature 99.4 degrees; black vomit; urinary suppression; died shortly after last observation, October 26, 4 A.M. This case, which ran a rapid course, terminated with a temperature of the axilla but little elevated above the normal standard. The diminution of the rapidity of the action of the pulse and respiration, also corresponded with the diminution of temperature.

Case 4.—Yellow fever; jaundice; formation of bed sores and large abscess on thigh; death at the end of four months from effects of abscess of thigh; the pulse during convalescence was more rapid than in uncomplicated cases of yellow fever, which pass to convalescence and complete recovery, without the supervention of local inflammations. Emanuel Scheise; age 37; native of Germany. Has been residing on Frenchman Street. Entered Charity Hospital, Ward 25, Oct. 29, 1873. On entering the hospital the patient stated that he had been suffering with a high fever for three days. This fever was accompanied with violent pains in supraorbital, lumbar, and epigastric regions, and pains in the eyes and lower extremities. At the time of his entrance into the hospital the patient was jaundiced, had fever, nausea, and hemorrhage from the nose and gums. The capillary circulation was sluggish and the urine scant, albuminous, with casts of the tubuli uriniferi. The patient was treated with the sulpho-carbolate of sodium, 20 grains every four hours; ice water injections to the rectum, brandy and water charged with carbonic acid gas, iced milk, beef tea and ice bags to epigastrium. Although hemorrhage took place from nose and gums and jaundice supervened the patient passed safely through the active stages of yellow fever. When, however, convalescence should have been established, the pulse and temperature continued above the normal standard; the patient complained of great pain in left groin and thigh. The limb became enormously swollen. A large abscess finally formed which was opened on January 7 and discharged over half a gallon of offensive pus. The patient died February 24, after prolonged and intense suffering from the abscess and from several large bed sores, on the hips and over the sacrum. The following is a record of the pulse, respiration and temperature:

Date.	Pulse.		Resp.		Temp.	
1873	M.	E.	M.	E.	M.	E.
Oct. 30	100	98	18	18	103.6°	103 °
" 31	88	92	20	20	100.6°	101.6°
Nov. 1	82	82	18	18	100.4°	101 °
" 2	78	88	20	20	100.6°	101.8°
" 3	100	98	21	24	103.8°	103.7°
" 4	100	. . . .	22	. . . .	102.6°	. . . . .
" 5	100	. . . .	22	. . . .	102 °	. . . . .
" 6	96	96	22	24	102 °	102.6°
" 7	86	84	20	20	102.4°	101 °
" 8	74	90	18	22	101.2°	102 °
" 9	70	80	20	22	100.6°	100.8°
" 10	82	. . . .	20	24	100.4°	101.5°
" 11	70	110	20	24	99.7°	101 °
" 12	72	98	18	18	99 °	101.2°
" 13	85	98	20	22	99.2°	101.8°
" 14	100	98	18	18	100.8°	101.4°
" 15	94	. . . .	20	. . . .	100.4°	. . . . .
Dec.	90	110	20	24	100 °	103 °
Jan.	100	120	24	28	101 °	104 °
Feb.	110	140	28	30	101 °	104 °

REMARKS.

October 30.—Complains of great weakness; conjunctiva of eyes yellow; surface slightly yellow; tongue very red at tip and edges; gums red and swollen; teeth covered with sordes; breath and odor of body very offensive; bowels constipated; passes urine freely; stomach irritable; tenderness of epigastrium; hemorrhage from gums and nose; thirsty, great dryness of mouth and throat.

October 31.—Urine contains albumen and yellow granular casts, and cells from tubuli uriniferi; eyes congested, surface congested and yellow; pain in epigastrium, nausea relieved; conjunctiva of eyes yellow and congested; tongue red at tip and edges, and heavily coated in the center; gums red and swollen; urine high colored.

November 1.—Diarrhea; stools are very offensive and of a light yellow color; jaundice, capillary congestion; eyes congested, red and jaundiced; complains of pain in right ear.

November 2.—Complains of severe pains in groins; urine contains albumen casts and bile.

November 3.—Pulse frequent, full and strong; pains in groins very severe; lymphatics swollen and painful.

November 4.—Pulse frequent and strong; has fever; pain located in left thigh, which is swollen, painful and tender; albumen in urine, but diminished.

November 5.—Pain and swelling in thigh continue.

November 6.—Perspiring freely; pain in thigh very severe, it is necessary to use opium freely; the bowels are kept open and the patient supported with tincture of cinchona.

November 7.—Thigh swollen and hard and very painful; thigh painted with iodin, tincture of bark and sulpho-carb; alcoholic stimulants.

November 8.—Pain and swelling of thigh; applied ointment, compound of tincture of iodin and opium, f. ʒij and sulpho-carb. ʒij.

November 9.—Opium internally; with bitter tonics and alcoholic stimulants applied, together with the local applications to be productive of good.

November 10.—Pain less; improving; albumen in very small amount.

November 11.—Pain less; appears to be improving.

November 12.—Thigh not so painful, but still much swollen; patient sits up with some difficulty.

November 13.—Weak, but with some appetite.

November 14.—Pain and swelling in thigh continues; whole thigh from hip to knee swollen.

November 15.—Pain and swelling in thigh not so intense.

December.—During the remainder of November and during December swelling of leg continues, also hectic fever; temperature rises from 100 to 103 degrees; pulse 90 to 110.

January.—On the 7th of January abscess of thigh opened, discharging a large quantity of fetid matter; pulse report 100–120; temperature 101 to 104 degrees.

February.—During the months of February and January had sores formed upon hips and on sacrum; hectic fever; loose bowels; rapid pulse; great emaciation; fever; temperature from 101–104 degrees. Died worn out by fever and suffering Feb. 24, 1873.

In this case the patient passed safely through a severe attack of yellow fever, and then fell a victim to one of the occasional results of this disease, namely, abscess. The effects of the local inflammation in presenting the marked depression of the pulse are clearly shown in this case. I have recorded many cases illustrating the marked reduction of the beats of the pulse during the stage of so-called calm or depression and of convalescence in yellow fever, and will only adduce the following:

Case 5.—Yellow fever; jaundice; black vomit; hemorrhage from bowels; urinary suppression; fatal issue. Jacob Geir, native of Germany; age 39 years. Several years in this country. During the past seven months has been in the South, on a plantation near Baton Rouge. The white laborers, as well as himself were all attacked with fever. About two months before entering Charity Hospital, came to New Orleans, and was at that time suffering with malarial fever, which recurred at intervals up to the time of his admission. Admitted to Charity Hospital, Ward 22, Nov. 22, 1873, in the evening. November 23, 8 A.M., conjunctiva of eyes congested and yellow; skin of face and trunk yellow and congested; tongue red at tip and edges and furred in center. When the fingers are pressed upon the surface white spots remain into which the blood slowly returns and restores the florid congested appearance due to sluggish capillary circulation. Pulse 96; temperature 103.5 degrees. November 24, 8 A.M., pulse 84; temperature 101.2 degrees. Bowels loose during the night. Urine scant; nausea; threw up black vomit at 9:30 A.M. Reaction of black vomit strongly acid; urine albuminous, with granular casts of urinary tubes and desquamated cells from excretory tubes. R. Sulpho-carbolate of sodium ʒ iij. Divide into six powders. One powder every six hours. 8 P.M., vomiting of black vomit continues. Since this has begun the temperature has progressively declined. Pulse 82; respiration 30; temperature of axilla 98 degrees: November 25, during the night passed by the bowels black excrements mixed with blood. Only three fluid ounces of urine have passed during the last twenty-four hours. Urine yellow, turbid, loaded with albumen, casts and cells. Casts and cells of deep yellow color. Great capillary congestion; dependent portions of body mottled and of a purplish yellow hue. Hands and feet cold; the depression of temperature extends up to elbows and knees. Pulse can be scarcely felt at wrists. Temperature 98 degrees; pulse 70; respiration 26. 6 P.M., temperature 100 degrees; pulse 60; respiration 24. Black vomit and bloody black discharges from bowels still continues. November 26, 8 A.M., insensible; pulseless; temperature 98 degrees; respiration 20. Died at 11:30 A.M.

Case 6.—Yellow fever; black vomit; death. *Post-mortem* examination three hours after death; characteristic lesions of yellow fever. Daniel McMenagale; age 18; native of Ohio; left his native State two years previous to the present attack; resided in Memphis, Granada and Vicksburg; came from the latter place, and has resided in New Orleans two weeks. Has had chills and fever at various times during the

past two months. Entered Charity Hospital Oct. 11, 1873, 6P M. I saw this patient for the first time at 8 A.M., October 12. Intellect dull; patient unable to give a connected account of the present attack of fever. Surface of body covered with petechiæ; gums red; tongue red at tip and edges; body of tongue coated with yellow fur. Epigastrium tender on pressure. Conjunctiva of eyes yellow and injected. Tongue cracked and bloody. Blood oozes from the tongue, and also from the gums. During the night the patient vomited freely, and the matters ejected from the stomach contained flakes of dark blood. Only a small quantity of urine, about two fluid ounces were passed, which contained albumen and bile, and casts of the tubuli uriniferi and excretory cells. Injections into the rectum of ice-cold water were ordered, and these appeared to restore to a limited extent the action of the kidneys: The following table embodies the prominent symptoms:

Date.	Pulse.		Resp.		Temp	
1873	M.	E.	M.	E.	M.	E.
Oct. 12	110	112	22	26	104.6°	105.5°
" 13	110	112	29	34	104.5°	104.7°
" 14	116	130	35	38	103.3°	103.3°

REMARKS.

October 12.—Body emits a foul odor; surface covered with petechiæ; intellect dull; tongue soft and cracked; blood oozing from cracks in tongue; tip and edges of tongue red; center coated with yellow fur. Conjunctiva yellow and injected. Capillaries of surface congested, giving a dusky, mottled appearance. Urine scant and contains albumen, bile and casts of tubuli uriniferi, and few cells. Nausea and vomiting; vomited matter streaked with blood specks. Treatment: Ice-water injections; ice-bag over epigastrium. Brandy diluted with water charged with carbonic acid. Iced milk and beef tea.

October 13.—Patient dull and stupid; action of kidneys feeble. Condition of intellect due in part at least to failure of function of kidneys and retention of excrementitious matter. Ice-water injections have increased to a small extent the excretion of urine, but the amount is still far less than normal. Urine contains albumen, bile and casts of tubuli uriniferi. Patient has thrown up black vomit in considerable quantities. Black vomit acid and contains urea. Repeat cold water injections and ice to epigastrium.

October 14.—Patient dull and lethargic in the exercise of the intellect. Talks incoherently; very restless; attempts to get out of bed and speaks of going home. Has passed a small quantity of urine, albuminous and loaded with casts (granular and yellow), and also contains bile. Great capillary congestion of surface; jaundice; spits up black vomit against the wall and over the bed like tobacco juice; the black vomit appears to come up without any effort. Can retain nothing upon his stomach.

Died October 15, 6 A.M.

During the night of October 14 the patient discharged black vomit from his mouth, over his bed and against the side of the wall. The black vomit appears to come up apparently without an effort. Surface of the body of an intense yellow, with great capillary congestion. Only a small quantity of urine was collected from the 12th up to the time of death, although the nurse states that the patient has "passed his water in the bed," after the administration of the ice-water injections. The application of bags of ice to the epigastrium did not arrest the nausea and vomiting. The sluggishness of intellect and delirium increased progressively from October 12.

Post-mortem examination, three hours after death: Body of a golden color; lower portion of a purplish, mottled appearance from capillary congestion. Dark brown blood, black vomit, issues from the corners of the mouth. Blood issues from the left ear. Thorax: Lower portions of lungs congested; otherwise normal. Heart: Muscular structures of heart present a yellow appearance, as in fatty degeneration of this organ: Under a magnifying power of 450 diameters, the transverse striæ of the muscular fibers were found to be indistinct, and the fibrillæ were filled with oil globules, and granular albuminoid or fibroid matter; the oil globules were also deposited around the fibrillæ. The albuminous substance of the sarcous elements of the fibers were evidently in an altered and degenerated state, being resolved into granular matter and fat. Heart still warm, and its fibers filled with dark fluid blood, which coagulated and changed to the arterial hue when removed and placed in glass vessels. Under the microscope, with a magnifying power of 450 diameters, the vast majority of the colored blood corpuscles presented a normal appearance, while a few presented a crenated and stellate appearance. The blood corpuscles adhered together, forming rolls, as in the blood of inflammation. The blood contained oil globules. The dark pigment particles, as well as the colored corpuscles charged with pigment particles, characteristic of the blood in true malarial paroxysmal fever were entirely absent. After careful microscopic examination, I discovered no living organisms, neither bacteria, fungi, algæ, or animalculæ of any description in the blood. Reaction of the blood very slightly acid. Fibers diminished in amount. Clot voluminous and soft. Upon standing, a small amount of golden-colored serum, containing also some colored corpuscles, was pressed out of the coagulum; the fibrin of the clots, however, manifested very feeble contractile powers. Pericardium greatly congested, the smallest vessels being distinctly seen, filled with red blood. This congestion of the pericardium appears to be characteristic of yellow fever. Abdominal cavity: Liver presented a yellowish mottled appearance. The mottled appearance of the liver was due to the congestion of the hepatic capillaries within the central portion of each lobule.

The periphery of each lobule, in the area occupied by the portal system of capillaries, presented the deep yellow color characteristic of the liver in yellow fever. Upon careful inspection of the surface, and of sections of this organ, many portions were found to be without any marked capillary congestion of the hepatic capillaries, and presented a uniform yellow color. Upon a superficial examination of this organ, as it lay in its natural position in the abdominal cavity, the appearance resembled that of the liver of health, the color approaching Spanish brown; when, however, it was carefully examined, within and without, the characteristic change induced by the disease was evident; and when sections were subjected to the gentle action of water, and the excess of blood pressed out of the capillaries the color was uniformly yellow, as in the livers of those who had died at a more advanced stage of the disease.

The depth of color of the liver in this case was due to two causes: 1, to the great congestion of the hepatic (central) capillaries; and 2, to the presence of dark granular masses of hematin, scattered chiefly through the meshes of the portal system of capillaries, and which had evidently been deposited during the preceding attacks of malarial paroxysmal fever.

It is probable that such cases as the one now under consideration have led superficial observers to assert that the liver presents no characteristic lesion in yellow fever. Under the microscope, the liver was observed to be loaded with oil globules. Fatty matter in the form of oil globules of various sizes, was accumulated within and between the cells. The structures of the liver were firm, and the blood also changed to the arterial hue upon exposure to the atmosphere. While, therefore, the microscopic examination revealed the effects of preceding malarial disease, at the same time, it also clearly illustrated the pathologic changes induced by the yellow fever poison. The muscles of the walls of the abdomen and of the chest, when exposed to the atmosphere assumed a brilliant scarlet color, wholly unlike the dark color of the muscles in malarial fever.

Gall bladder entirely empty; contained no bile. Kidneys: Congested and of a yellow color, resembling

the color of the heart and liver. The yellow color of the kidneys was especially evident when sections were washed under a gentle stream of water. Sections of the kidneys, with Valentine's knife, examined under magnifying powers of various degrees, revealed the presence of oil globules, granular albuminoid or fibroid matter, and detached excretory cells within the Malpighian corpuscles and tubuli uriniferi. The blood vessels of both the cortical and medullary portions were congested with blood. Both the cortical and medullary portions presented a yellow granular appearance. Many of the uriniferous tubes presented a yellow opaque appearance, being completely filled with yellow granular matter, oil globules of various sizes and detached epithelium. This yellow opaque matter resembled in all respects that composing the casts of the tubuli uriniferi found in such abundance in severe cases of this disease. In some tubules the epithelial cells could not be discerned, either because they had been detached and removed, or else because they were obscured by the oil and granular matter with which the structures were infiltrated. In portions of the kidneys the oil globules were observed around as well as within the tubuli uriniferi.

Bladder: The urinary bladder contained about eight fluid ounces of golden or orange-colored urine. Reaction of urine, acid; specific gravity 1012. Albumen present in considerable amount. Under the microscope, detached cells from the tubuli uriniferi and yellow granular casts were observed in considerable numbers; but as usual there were no crystalline forms of urinary deposits. No living animal or vegetable forms were observed in the urine. Urine contained no grape sugar.

Alimentary canal: Stomach and intestines somewhat congested upon the exterior. Mucous membrane of stomach moderately congested in some portions, and in others patches were observed of a deep red color; it was also denuded of epithelium in some parts.

Black vomit: The stomach contained about eight fluid ounces of thick, grumous, dark, purplish black, bloody looking black vomit. Under the microscope the black vomit was found to contain some oil globules of the milk administered to the patient, with numerous black masses of hematin, altered blood corpuscles, epithelial cells and patches, and fibroid and granular casts of the mucous membrane of the stomach and broken capillaries.

The black vomit, although taken from the stomach only three hours after death, and while the body of the subject was warm, emitted a foul, putrid odor, as of decomposed blood. Upon careful microscopic examination I discovered no animalculæ or vegetable plants (fungi or algæ) in the black vomit. Reaction of black vomit slightly acid.

The spleen was enlarged and somewhat softer than in health, but much firmer than in recent cases of malarial paroxysmal fever.

(*To be continued.*)

CENTRAL DISPENSARY AND EMERGENCY HOSPITAL, WASHINGTON, D. C.—At the regular monthly staff meeting held on the 2d inst., the Senate Committee on appropriations has reported favorably on the item of $15,000 for maintenance of the hospital.

NEW INSTRUMENTS.

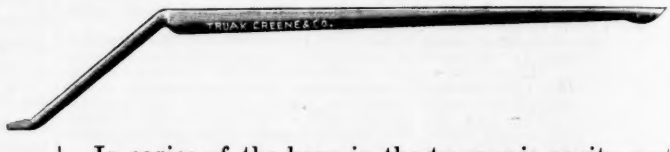
A MASTOID GUIDE AND SEPARATOR.

BY SETH SCOTT BISHOP, M.D.

PROFESSOR OF OTOLOGY IN THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL OF CHICAGO.

This instrument is so constructed as to serve two purposes in operations on the external auditory canal and mastoid process. The end of the handle is fashioned into a periosteum separator for the canal, and is useful in Stacke's and other operations that require the separation of the integumentary canal from the bony meatus.

It is used as follows: After the incision is made behind the attachment of the auricle, and the mastoid periosteum is lifted from the bone by the large elevator as far as the border of the bony canal, this small separator is introduced between the posterior osseous wall and its periosteal covering with the convex surface of the instrument against the bone. The end of the handle is then pushed carefully inward with the scraping surface directed firmly against the bone until it reaches the middle ear. The instant it arrives at this cavity can be determined by the fact that resistance to the onward progress of the separator ceases at that point. Now the cutaneous canal and periosteum are lifted as far as necessary by lateral movements of the scraping edges.



In caries of the bone in the tympanic cavity, great care should be exercised to avoid wounding the facial nerve, in case the Fallopian canal is diseased or partially destroyed. This precaution, however, is just as necessary when knives are used, as is the present custom.

This separator has several advantages over the knives: It preserves the periosteum; it does not cut the cutaneous canal; it does not chip and hack like the knives; it is easier to manage; it is adapted to both large and small canals, and it reduces the number of instruments to be looked for and handled. The scraping edge should not be sharp enough to cut the fingers of the assistant who holds it as a mastoid guide.

Its advantage over the mastoid directors now in use is in the shape of its foot plate, which is tapering from heel to toe. This form admits of its being introduced into the aditus or the antrum through an opening that is too small for the present broad instruments to enter. Its wedge shape facilitates its passage through a narrow opening in the bone, when the latter is softened by caries, where the other guides refuse to enter.

I have found by a series of experiments with this instrument that the facial nerve can be protected from injury by the chisels, gouges and curettes if the guide is held with the foot plate resting in the aditus ad antrum, and the handle so directed across the patient's cheek as to lie in a line with the lower border of his upper teeth or lip. In this position the foot plate lies over the Fallopian canal, and must be held steadily in this position so that the operator's

instruments will come in contact with the guide before they can penetrate deeply enough to reach the Fallopian canal and facial nerve.

This instrument was made for me by Charles Truax, Greene & Co., of Chicago.

Columbus Memorial Building.

Proceedings of the First Meeting of the American Academy of Railway Surgeons.

Held at the Grand Pacific Hotel, Chicago, Ill., Nov. 9 and 10, 1894.

(*Continued from page 134.*)

FOURTH SESSION, SATURDAY, NOVEMBER 10, 9 A.M.

DR. H. J. MAYNARD in the chair.

DR. A. RHU, Marion, Ohio, was called upon to act as Secretary during the temporary absence of Dr. Webb J. Kelly.

DR. R. S. HARNDEN, Surgeon Erie Railway Co., of Waverly, N. Y., read a paper on

THE BEST METHODS FOR APPROXIMATELY DETERMINING THE AMOUNT OF DAMAGES SUSTAINED BY A TRAUMATISM, FROM A MONETARY STANDPOINT.

In determining the proximate amount of damages by traumatism from railway accidents, we will invariably find ourselves embarrassed, and as Dr. Fitzgerald, of California, says, "involved in metaphysical distinctions and subtleties difficult of satisfactory application." Each case must be decided with reference to the circumstances peculiar and applicable to it. First, I believe all elements not proximately the cause of such traumatisms, should be eliminated. The railway corporation should not be held responsible for remote results, dependent upon aught else than actual negligence or fault of their own. Certainly, if a person suffer from a traumatism, and at the same time from psychic shock, the latter should be carefully considered or eliminated, and damages considered mainly upon objective indications upon the same lines followed by accident insurance companies. Prospective claim for damages, coupled with the inevitable hypnotic element, render the effort to determine the amount of actual or approximate damages satisfactory to claimant, even upon a basis of pure justice and equity, extremely difficult.

Sympathy for the injured and popular sentiment against wealthy corporations evolves suggestion, and prospective damages excites auto-suggestion, the latter stimulating the imagination and in time, if the case be not settled, aggravating the actual objective conditions, and causing subjective and psychic disturbances realistic to the hypnotic mind of the patient, which are often serious in themselves and sometimes even fatal. These well authenticated conditions exemplify the importance both to the injured and the company of early settlement.

In my own experience as authenticating physician for insurance companies, I have often heard the expression by attending physicians that they found it extremely difficult to cure their patients on account of their expectancy of prospective claims or benefits, hence, delay in settlement of claims against the company is attended with increased and increasing liability on account of the development of neuroses and other conditions resultant, it may be, from suggestion and auto-suggestion or hypnotism purely; but at the same time, to the claimant tangible, and before the courts often considered as proximate sequences of the original traumatism. "A result may be physically secondary and consequential, and yet in legal contemplation be proximate."—(See Col. Report, Vol. IV, page 345.)

In determining approximate amount of damages it should first be ascertained whether the company's act is the proximate cause of the injury. The legal test is—and we must constantly bear that in mind—"Was the injury of such character as might reasonably have been foreseen or expected as the natural result of the act complained of?" "A party is not, in law, chargeable with results which do not naturally and reasonably follow as the consequence of his conduct."—(Sackett's Inst. to Juries, page 274.)

The decision of the Supreme Court of Pennsylvania in the case of Ewing vs. Pitts., Cin., Chi. & St. Louis R. R. Co., has an important bearing upon this point also. While we are not to treat this subject from the standpoint of the claim agent we must bear in mind, as we proceed, the legal aspects which in all cases may be prospective. We cite the above case reported in *The Railway Age*, Feb. 19, 1892.

The syllabus reads as follows: "Permanent injury to the nervous system resulting from fear caused by a collision on defendant's road, due to defendant's negligence, in consequence of which the cars were thrown against the plaintiff's dwelling house in which she then was, will not support a cause of action; the permanent injury is not the natural result of negligence complained of." Continuing the court says: "It is plain from the plaintiff's statement of her case, that her only injury proceeded from fright, alarm, fear, nervous excitement and distress. There is no allegation that she had received any bodily injury. If mere fright, unaccompanied by bodily injury is a cause of action, the scope of what are known as accident cases would be greatly enlarged. For in every case of collision on a railroad the passengers, although they may have sustained no bodily harm, will have a cause of action against the company for the fright to which they have been subjected."

Thus we find, as a matter of law, damages to be reasonable must be the natural and reasonable result of the company's act or negligence. The liability of the company having been already determined or admitted, we then come to the question of reasonable approximate monetary damages. We must now take into account many circumstances, among them:

Mental distress or anxiety.
Psychic or hypnotic elements.
Loss of time and its actual monetary value.
The approximate amount of permanent injury.
The approximate effects of traumatism upon the expectancy of life.
Constitutional diseases and previous conditions.
Prospective damage by impairment of earning a livelihood.
Deception, means of.
Importance of early settlement as a means of restoration to health, and the duty of the railway surgeon to place the matter before the unfortunate claimant in its true light.
Many other matters might be mentioned, but the scope of this paper forbids.

Among the leading methods of examination, we will first emphasize the importance of avoiding suggestive questions, (the importance of this will be explained fully in other portions of this paper).

Referring to instruments of precision, we will not often find their use necessary; occasionally in the hands of the specialist, the dynamometer, audiometer or aesthesiometer may be found of service, and likewise the electric battery, but the use of the latter is exceedingly unreliable as a test of nervous or muscular excitability, if we are to accept the views of prominent authorities, and it has been thoroughly demonstrated that the preservation of normal faradic excitability in a muscle, does not prove that the muscle is not paralyzed.

1. Probably the first circumstance of importance in our examination and approximate estimate of damages, will be the mental anguish or distress of the claimant, consisting perhaps of grief and sorrow over the loss of a limb, becoming deformed, or suffering impairment of future earning capacity, etc. The courts having decided such mental anguish and grief to be proper elements for damages. (See case Schmitz vs. St. Louis, I. M. & S. R. Co.) The court in this case declares: "Mental anguish in a boy 9 years of age, consisting of grief and sorrow over loss of his limb, and becoming a cripple for life, is a proper element for damages in an action by him for injuries sustained by the alleged negligence of a railway company at a highway crossing," also that "prospective damage by the impairment of plaintiff's capacity for earning a livelihood after his majority, is a proper element in an action for personal injuries by a minor 9 years old, although his petition contains no specific allegation in regard thereto, and there is no direct evidence on the subject."

2. We should consider the psychic or hypnotic features of the case, bearing in mind that human nature would not be what it is if expectant pecuniosity did not in some measure hypnotize the claimant. There are many cases on record which we will not, for want of space recall, where slight and unimportant injuries developed various emotional and hysterical symptoms, followed by preferment of claim for damages, and where such psychic neuroses have developed into very serious mental trouble, and resulted in large amounts being awarded the plaintiff by the jury and followed by a complete restoration to health.

Oppenheim, who is probably the highest authority we can quote, says: In his experience and in his view, psychical disturbance and change, amounting almost to insanity, have

a more prominent place in the history of accident cases than is generally accorded them. He speaks of anxiety growing into real pathologic entity. If this be true of the German, then we should certainly find it more frequently among our blended nationality in this country who are, as a rule, of a highly nervous temperament. Charcot says that "traumatic suggestion" often takes the place of "oral suggestion." Sir James Paget declares the fault is rather in weakness of the will than in its perverse strength and that when the patient says: "I can not," it looks like "I will not," but it is "I can not will." He says hosts of cases establish this fact that patients will not or can not make the necessary effort to resume work so long as the settlement of their pecuniary claim is unaffected.

Apropos of this element, and perhaps disproving fraudulent intent, is the statement of Brouardel and Pouchet that they discovered in cases hynotized into convulsions the convulsive ptomaine, and in one greatly depressed and shocked an anesthetizing ptomaine; probably these ptomaines are the results of psychic shock. Seguin says it has been known for several years that in perfectly healthy persons serious nervous symptoms may be produced by hypnotic or by non-hypnotic suggestion; he also mentions a source of persistence and aggravation of symptoms, strangely overlooked by nearly if not all writers, namely, "sympathetic care." In my own experience this has for years engaged my attention. A long-faced, kind-hearted and sympathetic nurse or attendant I have found as fatal, in some cases, especially those of traumatic neuroses, as the bite of a cobra. How many present ever saw a case of "traumatic neuroses" complicating a severe external traumatism? It rarely does so. A passenger, drunk or asleep, escapes the symptoms of "traumatic neurosis" in great measure, at least it is so admitted by all writers. They are not hynotized by the horrifying excitement of their environment.

The fact that cases of psychic neuroses are long in recovering, or perhaps do not fully recover, Dr. Seguin claims is an argument that there is organic lesion.

Many cases of supposed malingering are, no doubt, honest types of "hypnotic neuroses." We should take this fact, now so well authenticated, into account, and consider carefully every feature of the case. It is my opinion that cases of glaring fraud are not common, but a very large element of unconscious and unintentional fraud nevertheless exists in these cases of traumatic neuroses or subjects of auto-suggestion. In private practice we are constantly misled by our neurotic patients, where no other element exists to influence deception than one of morbid exaction of sympathy or desire to cause their friends to share in their sufferings. Patients will manifest the greatest surprise if it be suggested that they should resume work. When a man has been prostrated by illness or injury and convalescence has set in he must make some voluntary effort to regain his former activity.

3. *Loss of Time and Its Actual Value.*—This will depend in large measure upon the conditions and circumstances attending each case. We must consider in this connection only damages for actual value of time lost. We shall refer, in a classification of injuries commonly met with, to the approximate value of time lost, etc. The practical question is, What is the actual pecuniary loss? The party suffering from a traumatism may claim that they would not have had such an injury or accident with its attendant risks for a large amount, but we do not take into account solace of that character. The courts have so ruled.

4. *The Approximate Amount or Extent of Permanent Injury.*—In the mind of the traumatized sufferer, this element we will usually find exaggerated. The courts and juries have never imposed upon the surgeon that he should promise recovery, or contract to unite bones which have suffered fracture, and I believe it is also a fact that courts of law do not, as a rule, find against corporations or defendants in litigation cases, damages for aught but such conditions as cause actual pecuniary detriment; hence we must exclude deformities which do not involve loss of function and also eliminate fright neuroses, which, though permanent perhaps in character, are not properly to be considered as the proximate sequence of the company's negligence or fault.

It is at once evident that a deformity or neurosis which involves a permanent impairment of function and resultant loss throughout the balance of the life of the party should be considered, and compensation corresponding to the pecuniary loss in each case advised. Such cases are extremely rare, aside from the injuries attended with loss of limb, ankylosed joints and severe sprains, accompanied with rupture of tendons or ligaments. We should exercise extreme caution in all other cases of alleged permanent injury, as the expectancy of monetary reward is notoriously a prominent factor as an incentive to fraud. Thousands of well authenticated cases have been reported, and I have myself testified to permanent disability in more than one case and found, to my disgust and chagrin, that the payment of a handsome award for the alleged permanent damages was followed promptly by a rapid recovery. A case in point, reported by my uncle, Dr. Lewis A. Sayre, will illustrate this feature, where a man was treated by him for a fracture of the spine, by suspension and plaster jacket, resulting in perfect recovery two years subsequent to a railway company's paying him a judgment of $30,000 for permanent disability.

The mention of this case calls to mind the astounding fact lately published that the railways of Europe paid, prior to 1888, for spinal injuries alone, upwards of two million dollars. In the light of the present day, and largely as a result of the brilliant and remarkable efforts of the members of the National Association of Railway Surgeons, the fact is made clear to railway managements that a large share of this money was fraudulently obtained. The mimicries of spinal tenderness are often simulated, and it is now a recognized fact that spinal tenderness, by itself, has but little significance in reference to diseases or injury to the cord. In considering the permanent character of alleged spinal injuries we should learn an important lesson from the observations and experiments of Manley upon seventy-one human beings and twenty-two animals and also the experiments of the late Professor Watson, showing the extreme improbability and rare occurrence of permanent injury to the spinal cord from extrinsic or excentric injuries; also that injury to the spinal cord is exceedingly rare in traumatisms not involving fracture. We should also bear in mind that many cases of functional paraplegia have been observed to recover after settlement of claim.

In a digest of 400 consecutive cases of railway injury by Dr. Howard J. Williams, of Macon, Ga., 4 cases of apparent spinal traumatism occurred, 2 of which proved to be shams, 1 was attended with fracture and 1 with hemorrhage into the cord. Among a much larger number of cases of railway traumatism in my own practice during the past twenty-two years, I have met with but one case of spinal injury and that was attended with fracture, followed at once by paraplegia, and death after several years.

Pope, the eminent surgeon, says, "After tabulating 230 cases of spinal concussion from railway injuries, that the great majority of them were tinged with the coloring of imposition."

Pain in the region of the spine is not, in itself, indicative of anything more serious than muscular or ligamentous strain or "entasis" as it is designated by some French authors, and cystitis often ascribed to paralysis of the neck of the bladder, will often be found to be simply the result of residual urine while in the recumbent position. Numbness and "tingling" may be symptoms of significance, although subjective, but is often due to local or external injury.

5. *The Approximate Effects of Traumatisms upon the Expectancy of Life.*—In determining this element or factor from a monetary standpoint, we must take into account the age and previous conditions of health of the injured party and the degree of shock. It is a well established fact that those past middle life suffering from severe traumatism, attended with serious shock, do not so fully recover therefrom, and it is a matter of common experience and observation that they do not attain to the usual period of longevity in many cases. It will also be well for us to bear in mind the fact that a feeble constitution, or one enfeebled by disease, is more likely to be shattered or permanently injured and life itself or the expectancy of life cut short. These and other like conditions bearing upon the expectancy of life, should be noted and considered in mitigation of amount of monetary award for damages, as the company is not responsible for conditions not naturally and actually the result of their negligence or fault. If the life be cut short by reason of previously existing disease, or as a result of prior injuries in any degree, then we should eliminate to that extent, approximately, the liability of the company and the amount of award.

6. *Constitutional Diseases Having an Important Bearing upon Traumatisms.*—We will find it important to consider carefully the indications pertaining especially to phthisis and syphilis, bearing in mind the very large percentage of the population affected in some degree by these formidable constitutional conditions. We will very often find serious traumatic results complicated by these insidious enemies of the human race, both of which hide behind the mask of secrecy. Sagacity and tact are requisite to ferret out these and all

other conditions, not actual sequences of the company's fault, that exact justice be done to both parties; and while the courts do not usually debar from compensation on account of these taints, we must consider them in order to form a correct estimate of the probabilities of recovery.

Herbert W. Page, M.A., M.C. Cantab., F.R C. Surgeons of England, in his excellent work on "Railway Injuries," 1892, says: "That while victims of railway collisions are not by any means exempted from liability to suffer from every form of lesion of the spinal cord and its membranous coverings, accumulated experience leaves no longer any doubt that these grave results are most uncommon and that it is the extra-spinal structures which, in ninety-nine out of a hundred cases, bear the brunt of the violence and suffer from it," and "that secondary and remote degeneration of the cord, in cases where there has been no distinctive evidence of injury, is very rare indeed." It would appear from these brief references to the phantom "railway spine," and the views of the highest authorities that we must not consider spinal affections or traumatisms even, when attended with syphilitic taints, as permanent conditions entitled to monetary compensation as such.

7. *Prospective Damage, by Impairment for Earning a Livelihood.*—This we referred to in the beginning of our paper, quoting from "A Page of Law," from notes of recent decisions by the courts in *The Railway Surgeon*, of Sept. 11, 1894. We consider this, as referring more particularly to minors. It may be there is no present disability on account of the age of the injured, but in justice and equity we must consider his future, and the probable impairment of earning capacity based upon the nature of the case, his environments, prospects, etc. The subject is covered under the head of permanent injuries, etc.

8. *Deception.*—Not in the language of sentiment, but of sober fact, who can measure the extent to which people will go in this direction, and we are not now speaking of autodeception but of the wilful malingerer? Herbert Page says: "The means of deception are curiously alike." This, because they learn through the press of symptoms of disease and injuries, or acquire such knowledge by suggestion from friends; but we will only allude briefly to this element; its powerful influence in railway cases is notorious and in this day thoroughly understood.

9. *Importance of Early Settlement.*—We should exercise care in early settlement that no injustice be done the claimant. The company can afford to be liberal with him, and perhaps award him in excess of what even he himself or his friends might consider ample compensation for actual damage sustained. They can afford this in many cases for the reason that, as a rule, they save money by so doing on account of many features already mentioned in this paper, but in my opinion, it becomes our duty not as claim agents, but as honorable members of an honored profession to make plain to the claimant the advantages to him from an early adjustment of his claim, not from a monetary point of view, but with regard to his own physical welfare. What does money amount to, obtained after years of litigation and mental worriment, which, in itself, often completely breaks a man down, compared with his health? He should be shown the physiologic and psychologic facts that are so well authenticated as tending to compass his physical and mental impairment. It is certainly a well recognized fact that early settlement is, in many cases, a curative agent.

CLASSIFICATION OF INJURIES.

In attempting a classification of the more important traumatisms, those commonly met with in railway practice, and the best methods of obtaining the approximate amount of monetary damages, we must consider the fact, now so well established, that the consequences of railway injuries are more grave than those attending accidents in other branches of industry; this both on account of the nature of the violence producing them, and from the fact that nearly all railway traumatisms are septic when they come under the care of the surgeon. Often the shortsightedness of the railway company, in not fully comprehending the *economic* value of competent and skillful treatment at the hands of surgeons fully abreast of the times, and the failure to adopt a surgical service that would result in the selection of a staff of such skilled and experienced surgeons, results in a large monetary loss to the stockholders of such corporations. I will only allude to two cases, among many thousands of like nature. One, where $20,000 was obtained as a verdict, in lieu of $5,000, which would have been the probable limit if the injured man had received proper treatment. The doctor in this case—for he certainly was not a surgeon—applied elastic constriction upon the proximal portion of the extremities for *forty-eight* hours, and gangrene supervened with the medico-legal results mentioned. The other case I have already mentioned, that reported by Dr. Lewis A. Sayre. Decisions of the courts, holding the company responsible for conditions following—even where clearly the result of such improper treatment—indicate to us that we can not eliminate damages in any degree on that ground.

1. We will consider compound fractures, as they are undoubtedly much more frequent than simple fractures in railway surgery and fraught with vastly more serious results *especially*, as we have indicated, in the hands of surgeons who do not practice aseptic surgery, and strange as it may sound to you experienced gentlemen, at least 50 per cent. do not. Only a few years since such conditions were expected to suppurate and granulate, and "laudable pus" was an indication of successful treatment, and the monetary damage and loss greatly enhanced thereby, it being generally conceded that a compound fracture would entail double the time in healing and be attended with many times the cost of medical attendance over a case of simple fracture. Any rules or schedules of fees for such injuries made ten years ago, certainly would require revision at this time, as most cases of compound fracture treated under *strict aseptic principles* are but little if any more formidable, or attended with much greater monetary damage to the claimant than in the case of simple fracture. In a given case of compound or comminuted fracture in which we find the external wound has healed by first intention, differing but little, if at all from the simple fracture, and where no great blemish or deformity remains, or any loss of function is apparent, we will not usually find it incumbent upon us to consider any element other than loss of time and its value, as permanent loss of function is very rarely observed following the conditions described; we should, however, bear in mind the approximate amount of time requisite for repair and restoration to normal degree of useful function, remembering always that muscles are only restored to vigor and normal power after fracture, by voluntary effort and proper exercise. Many a patient has become a hopeless cripple, simply because he "could not will," or did not, at any rate, exercise his will power—as Dr. Seguin puts it. In these cases the courts seldom make any exception, therefore, we must often find it necessary to consider such conditions. Under favorable and proper conditions we will be able to approximately determine the extent of lost time, from the observations of surgeons of large experience, but in individual cases it will vary somewhat.

1. *Fracture of Femur.*—From my own experience and that of others, I should consider in a case of compound fracture of the femur, that the degree of disability was total for at least six months, and partial six months; and at least four months of this time we should consider that total helplessness obtained, requiring an attendant. In this case we should also make an exception to ordinary fractures, compound or otherwise, on account of the inevitable shortening and the fact that but few people suffering this fracture escape some degree of deformity. In estimating the monetary damage this must be considered and aside from this, I believe, as compared with other fractures of extremities in continuity the damage would be four-fold. It is comparatively easy for the claim agent to approximate the amount by methods familiar to him, and followed by the Pension Department, taking the simple fracture of the lower extremity or forearm as a basis or starting point. Fractures of femur—intra-capsular—are so exceedingly rare in railway practice—as aged people to whom they are common, are infrequent travelers—they need scarcely be considered, but on account of the fact that they seldom if ever unite by bone, and that they are attended by serious deformity, the monetary damage exceeds by far that of any other, unless it be fracture of the pelvis.

2. *Simple Fracture of the Femur.*—Excluding cases of non-union—such fractures are exceedingly rare—and the cause of such non-union, usually some dyscrasia, or lack of osseous element, the fault of the patient's own system, we will not usually find the damage much, if any less, than in the case of compound fracture of the femur, provided perfect asepsis has been followed out in the latter. Taking into account, however, the greater expenses attending this fracture—about three times that of simple fracture of the arm or leg—and the greater degree of suffering, tedious convalescence, slow restoration of muscles to their former activity, and from the functional ankylosis of the joints, and the slight deformity resulting from what Prof. Frank Hamilton declares the "inevitable shortening," we must consider them,

and approximately determine the damage, after taking into account the claimant's circumstances, earning capacity, etc. as indicated in previous classifications.

Fractures of the femur near, and involving the knee joint, on account of resulting ankylosis, and perhaps destruction of the joint, are much more serious, and should be classed with compound fracture of the femur not treated aseptically.

3. *Compound and Simple Fractures of the Leg.*—We classify them together, because as before stated, the approximate damage is, or need not be, under asepsis, but little if any greater in the former than the latter. Fractures in this region are undoubtedly oftener attended with non-union and deformity than in the upper extremity; in other respects the conditions and considerations obtaining with respect to damages are about the same; possibly a slight difference as regards the period of convalescence, should be considered. Fractures of the lower extremity, not having so perfect a circulation, process of repair does not so quickly or certainly follow. Cases of non-union or necrosis seriously impair the nervous system, and through the agency of sepsis break down the whole system and render the question of damages a serious one, and such cases if brought into the courts are often attended with judgments for large amounts. This should be borne in mind. If such conditions be attributed by the claimant to fright or shock at time of injury, then we should consider the decisions of the courts bearing thereupon which I have quoted; and for the simple reason that but very few coincide in their views with these decisions, I will encroach upon your time by quoting a recent decision from the *Medico-Legal Journal* of New York, of September, 1894. In Haile Curator vs. Texas and P. Ry. Co., United States Circuit Court of Appeals, 60 Federal Reports, 557, it was held that, "when a passenger on a railway train *receives no bodily injury* in an accident, caused by the excitement, hardships, and suffering resulting therefrom, the company is not liable in damages therefor, since insanity is not a probable or ordinary result of exposure to a railway accident." In the light of this and former decisions quoted, we must not consider fright or psychic shock. Non-union or necrosis would not be the "ordinary result" of such conditions, and surgical experience has fully proved them to have invariably resulted from well-known systemic conditions in the vast majority of cases.

4. *Fracture of the Arm and Forearm.*—In these fractures we will find the same general conditions to be considered as already mentioned in other fractures. We should consider the difference in right or left, as the usefulness of the member is not so important a factor in the left as in the right arm. A person suffering fracture of the former will not be so long disabled as in the latter, consequently the element of lost time and its value, differs materially. Considerations of permanent injury will seldom attach to fractures of the arm or forearm, unless complicated with injury to joints, which will be classified separately.

The slight deformity usually following fracture at the wrist, (Colles fracture) if not attended with loss of function must not be taken into account, as such slight deformity is the "proximate and usual result," under the most approved treatment.

The approximate amount of damages in case of fracture of the arm, is a proper basis of damages for other fractures, as it is seldom attended with permanent results and future impairment of usefulness. The value of time, expenses incident to it, and reasonable compensation for partial loss of function, beyond, say three months, which would be a fair approximate of the total disability, in a case, compound or simple, not complicated with loss of tissue or comminution of bone. Under contusion and lacerated wounds, mention will be made of such cases.

Fracture of ribs, not attended with perforation of lung, we will not often be called upon to consider. Fracture of pelvis, when not fatal, is a formidable condition of as grave a character as fracture of the femur, and attended with permanent deformity and serious physical shock, followed by permanent impairment of health.

Fracture of Fingers and Toes.—Fractures either of digits or phalanges, is attended with loss of time proportionate to that resulting from fracture of arm, but function is sooner restored and approximate amount of such damage not to exceed one-half that of the latter.

5. *Dislocations.*—This class of traumatisms is quite rare in railway practice, and so seldom attended with permanent results that we may with propriety pass it over, only calling attention to undiscovered or neglected cases which, "in spite of" the ignorance or neglect of the surgeon must be considered as proximate, and damages attach by reason of permanent deformity and disability. An exception should also be made of dislocation of the astragulus which is often attended with deformity.

6. *Amputations.*—In this class of traumatisms the same circumstances and conditions prevail as in fractures, with reference to loss of time, suffering, etc. But as regards the degree of permanent disability and approximate effects upon the expectancy of life, there is manifestly a difference especially in the latter. It is a well-known fact that amputations cut short the expectancy of life. Reflex conditions are common in stumps, which often produce serious nervous and even psychic disturbances. Amputation is the opprobrium of surgical art, and beyond the impairment for manual labor there is an element or sense of opprobrium, a mental anguish over the existing deformity. In many such cases I have observed a hypersensitiveness so great that upon the slightest manifestation of pity, sympathy, or any allusion whatever by a warm friend even, he would forfeit their esteem. The approximate amount of permanent damage for earning a livelihood, resulting from amputation of the arm or fore-arm is taken by the Pension Department as a basis of all traumatisms and diseased conditions as well; from $30 to 45 per month being the pension allowed for such loss of arm or fore-arm. In this Government award other conditions, or resulting conditions, are not followed by any farther increase of pension, the minimum pension named being considered the equivalent of allowance for total disability, unless it be in cases of total helplessness where an attendant is required; and in that case the amount allowed is $72 per month. From this, allowing for the conditions recognized by the courts quoted in the beginning of this paper, it would be comparatively easy to approximate the total amount of damages in any case of traumatism, taking into account conditions mentioned heretofore and also the normal expectancy of life.

The approximate and just monetary award in other amputations does not differ greatly, except as regards expenses in attending them. The disability for the performance of manual labor would depend somewhat upon the avocation of the claimant, but the loss of an extremity, either upper or lower, is usually considered as total disability. Amputation of digital or phalanged extremities should be considered, as the grasp of the hand is impaired, and the symmetry of the member destroyed; but as compared with the loss of the arm, the damages would be very small, unless all or most of the digits were amputated, when the damages would reasonably be nearly as great as from the former.

7. *Contused and Lacerated Wounds.*—These, the most common of all railway traumatisms, are often serious in character and often complicated with injury to or fracture of osseous structures, or injury of periosteum resulting in necrosis, and in many instances injury of peripheral nerves causing reflex conditions in remote portions of the body or brain. Unless there be actual loss of tissue, we do not, under modern asepsis, often meet with such conditions resulting from traumatisms to the soft tissues. Tetanus and tetany, now known to be of septic origin, are almost unknown where sepsis is prevented by efficient antiseptic agents. It is obvious that the railway companies are, in an economic sense, greatly the gainers by the wonderful results of such antiseptic treatment, as the expenses attending the modern treatment of lacerated wounds are not one-fourth what they were but a few years since, and permanent injuries resulting are far less frequent.

In any case of crushed or lacerated wound, we must observe the same conditions as in the case of compound fractures, considering the loss of time, etc., and taking into account the deformity or impairment of function; and also the uncalled-for damages resultant from the mistake of the company of employing back numbers to do modern surgery.

We would consider scalp wounds attended with fracture as serious, for the reason that they are so often followed by serious results. Aseptically treated, these wounds when not attended by fracture, heal rapidly and seldom become elements in cases of claims for damages.

8. "*Entasis*" *or Sprains.*—We find this class of injuries to be about 10 per cent. of all railway traumatisms, and will be called upon to consider them by reason of the permanent disabilities often resulting. Sprain of the knee joint often terminates in inflammatory conditions, followed by destruction of the joint and permanent deformity or loss of limb. Damages should be apportioned in such deformity as in other cases of impaired function, and so on. Sprain of the ankle joint we often find a source of permanent impairment, the same conditions pertaining to the wrist joint with its ligamentous and complex articulation. Rupture of tendons

or muscular tissue from sprains is met with, resulting frequently in permanent impairment of function but not often in serious damage.

9. *Injuries to the Eye and Ear.*—These we will send to the specialist who is employed, or should be, by the company, as "Uncle Sam" sets them the example.

10. *Rupture, or Acute Hernia.*—This is of infrequent occurrence, being met with in only about 2 per cent. of all cases of traumatism. Damages could reasonably and approximately be determined as indicated in amputation of the arm, from amount awarded by the Pension Department.

11. *Scalds and Burns.*—This class of injuries occurring only in 3 or 4 per cent. of all cases, is often of serious character, and usually fatal. The super-heated steam of the engine boiler is a terrible agency, and where a surface of the body equal to one square foot comes in contact with it, for sufficient length of time to scald the true derma, death of the victim follows. In cases not so seriously burned, great suffering results, attended with severe nervous shock and followed by serious deformity. If the face be the portion receiving the impact of the steam, as is frequently the case, if recovery take place the patient is subsequently found to be greatly disfigured. The method of "blowing out the ash-pan," is often attended with terrible results to the engineer or fireman, as I have myself in several instances observed. In determining the approximate amount of damage in these cases we will usually only be called upon to consider the disfigurement, impairment, or loss of eyesight, as the shock from burns is not, usually, attended with permanent neuroses. Many other conditions might properly be mentioned, but I have only sought to refer to the traumatisms commonly met with.

This will conclude my consideration of this important subject, and I am fully conscious that I have very imperfectly fulfilled the task allotted me: "*The Best* Method of Approximately Determining the Amount of Damage Sustained by a Traumatism, from a Monetary Standpoint."

DISCUSSION.

DR. JOHN E. OWENS, of Chicago—I find very little to say at this moment, except perhaps to express my appreciation of the value of this paper. It is comprehensive and covers a great deal of ground. It has been carefully prepared, and I have been very much instructed by it. At the same time in the discussion I would feel myself involved in an inextricable network were I to state the method of determining from a monetary standpoint the result from traumatism. There are so many elements involved that each case must serve as its own, or should be a problem of itself, and must be decided upon its own merits. I presume that the only discussion I ought to enter upon would be that from the standpoint of a surgeon or physician. At all events, so far as an adjuster is concerned, I have had very little experience, and I have never encouraged it among the surgeons on the lines of roads that I happen to be interested in. There are so many legal points involved in the case, so many circumstances that belong to the train service that I find, and I think others find, it would be impossible for them to wade through all and arrive at a just legal conclusion, to say nothing of the conclusion the doctor or physician himself might arrive at. When I asked a rather prominent gentleman something in reference to such matters, he said: "Is this meeting one of claim agents, of lawyers, or surgeons?" I told him in many cases he would find all these combined in the doctor, and I believe that is the case in some few instances. Again, I believe that the two positions, the position of adjuster and the one of surgeon are somewhat incompatible with each other. If it is known that the surgeon is not an adjuster, the patient unwittingly and sometimes more palpably shows animosity which interferes with the easy adjustment of the case. At the same time we can do considerable. The surgeon or physician, if tactful, can do very much in disabusing the patient's mind of these various conditions of exaggeration and influence brought about by cupidity, which the adjuster or certainly the attorney for the company can never do.

We never know what influences have been brought to bear on patients (plaintiffs) before they come into the court room. To show you I am right in this matter, I will venture to read some letters which I have secured. (These letters were then read.)

Since being notified that I was to discuss this paper a little, I have talked the matter over with some gentlemen who are very familiar with the workings of the question, and I will read just a few extracts of a letter from an attorney connected with a railway:

"Adopting the language of the clinics, every traumatism may be said to be manifested by two distinct sets of symptoms; the one objective, sensate; the other subjective, insensate; and the law following in the footsteps of surgery allows compensation for each of these manifested effects, combining the two in order to ascertain the extent of the physical impairment as a basis of determining the actual pecuniary loss which to some degree of correctness may be estimated, and at the same time looking at the subjective symptoms as a direct basis for compensation, the amount of which is wholly speculative, conjectural, and is measured only by human sympathy, the only check against which, if indeed there is any check, is what is called judicial discretion, which is but the sympathy of the judge set against the sympathy of the juror.

"Thus the compensation which the law allows consists of two distinct elements: One a compensation and re-imbursement for pecuniary loss; the other a *solatium* wholly speculative in amount for physical pain and mental suffering.

"Here the law in this, as in all other classes of wrongs and injuries, seeks to reimburse the injured person in the pecuniary loss which follows as the natural and proximate result and consequence of the injury. Into this measure of compensation, decreased earning capacity, loss of time, money expended about the treatment and cure of the injury and restoration of the physical condition and all extra expense made reasonably necessary and proper by the injury, enter as elements. The reasonableness and propriety of the expense will vary and be dependent upon differences in the circumstances and conditions of different persons according as they are refined, cultivated, intellectual, accustomed to the conveniences or elegancies of life, or as they may be brutish, coarse, ignorant, accustomed to hardships and poverty.

"The locomotive engineer who earns by his occupation $2,500 a year, loses both hands in a railroad wreck under circumstances which render the railroad company liable. How much should the company pay on account of lost earning capacity? The simple answer in the abstract is: "He should have such sum annually as equals the difference between the sum he would have been capable of earning each year during his life had he not been injured, and the sum he is capable of earning during the same period. How much is that? How long would he live? If he would have lived to be 80 uninjured, yet how many years and up to what age would he have been capable of earning $2,500 a year as an engineer? Being engaged in such dangerous occupation, what was his life expectancy? Or being so engaged, what was his expectancy as to immunity from injury as one of the risks of his employment incapacitating him as an engineer and for which the railroad company would not be liable?

"The theory, the abstract is easy. The question in the concrete, the present sum of money to be paid is the difficult thing to be answered.

"It has been contended by some, and even by some judges, that such a sum of money should be at present paid as when invested at the usual legal rate of interest would produce an annual sum equal to the annual loss in earning capacity. According to this method, if the annual difference should

equal $5,000 and the annual rate of interest 5 per cent., a jury should award $100,000 present damages. Yet this is obviously unjust, for the reason that the injured person during his life would not have received as much as in all probability he could have earned uninjured, and at his death his heirs would be entitled to the principal which the ancestor would never during his life have been able to accumulate.

"In my judgment the best method of determining this question, should be based upon, but in some respects different from the method of estimating the present cash value of dower estates, life annuities, or annuities for other fixed periods. This method is the result of calculations as to the present value of a fixed annual value or sum continuing for an uncertain period. The probable duration of the period being estimated from the life tables. The method is fully explained in the Wigglesworth Tables, and others.

"Thus a woman 40 years of age having a dower estate valued at $1,000, the present cash value of such an estate is only $630.

"In estimating annuities and dower interest, both terms of the proposition are fixed, one, however, being uncertain as to duration. In the question now discussed neither term is fixed for the earning capacity of man is affected, strengthened or impaired by many other causes than his physical and mental condition. And besides, while we have life tables showing the probable duration of the natural life, hence an estimate of the present sum to be paid an injured person based upon the existing tables would be much wider from the mark than on the estimates for annuities and dower interests.

"In the innocence of my youth I used to think that 'it is always the wounded bird that flutters,' but since I have been an attorney for a railroad I have seen full many a bird flutter that was not wounded. As to any basis, method or standard by which the amount of compensation to be allowed for physical pain and mental suffering may be even approximately measured, we are utterly at sea. The courts in allowing compensation for pain and suffering have arbitrarily and widely departed from the rules of law applicable to the measure of damages in all other cases. While this departure from the ordinary rules may meet the approval of our sense of humanity, it can not be reconciled with any correct principle of law, except in cases where the injury has been wilfully or wantonly inflicted in which punitive damages or smart money is allowable not as compensation to the injured person, but rather as a punishment to the wrong-doer.

"That the pain exists at all is a fact known alone to him who suffers it, while others are left to believe or disbelieve its existence accordingly as they may judge of the manifestation thereof by the alleged sufferer; who can say whether my tooth aches or that I suffer constant pain in the spinal column increased by finger pressure, without relying on the evidence of such pain emanating from myself alone? These injuries, these elements of damage, the symptoms of which are purely subjective, are indeed the most dangerous class of cases to railroad companies, and to them railroad surgeons should give careful attention in order as far as possible to detect malingering.

"There is no 'best method' for determining the compensation that should be allowed for physical pain and mental suffering, for the allowance of such compensation is wholly without method, measure or standard of any kind, beyond the varying and uncertain emotions of the human heart."

I believe myself that from a doctor's standpoint, I might venture to detain you just a second more by saying that for the railway surgeon the following points seem very essential, and it is incumbent upon us:

1. To have a due appreciation of the cause, nature and extent of the injury.

2. An acquaintance with the pathology and prognosis of similar injuries where there is no possible liability, and where cupidity can not become an element in the problem.

3. A careful management of the injury according to the most approved methods.

4. An opinion based on the known pathology of the injury.

5. The exclusion of all litigation and other extravagant, unique and inexplicable symptoms which find no foothold in our more fixed medical and surgical literature.

Giving an opinion upon such a basis would enable our attorneys and our claim agents perhaps to more easily arrive at a proper settlement.

DR. W. H. MEYERS, of Myersdale, Pa.—The discussion brought out this point, in reference to men being under the influence of liquor, saying that the essayist was correct, but that some men played the part of impostors and were not in any way entitled to pay from the company. The Baltimore & Ohio Railway Company always pays and settles its cases promptly and liberally. The following is the history of the case:

A. J. I., married; aged 49; residence Uniontown, Pa.; claims to be injured internally in abdominal region in New Castle (yard) Pa., wreck. He says he passed blood from bowels at stool in water closet in ladies' coach; passage examined by Drs. Gildner, Meyers and W. H. Meyers, Jr., and found no blood on examination in water closet nor in snow under water closet. The statement made by Mrs. Amanda Jacobs, 6135 Sangamon Street, Chicago, and others was that he did not complain of any injuries until after men returned from looking at the wreck. Drs. Gildners and Meyers found nothing apparently wrong, except that he was under the influence of some stimulant. Dr. Gildner and Dr. Meyers made a personal examination of patient, with reference to his pulse, examining his eyes, resorting to auscultation, percussion, etc.

DR. REED—The question, as stated in the program, the best method for approximately determining the amount of damage sustained by a traumatism from a monetary standpoint, is one that affects every railroad company in the country. It is one in which the railway surgeon is always called upon sooner or later to determine, and is one in which he is often placed in the most embarrassing position. If he is called upon to testify on the witness stand, this is one of the questions which the attorney for the defense will always ask, either privately or on the witness stand. It is one in which if there is no suit the surgeon is again asked by the company to settle. Now, the question of getting at this matter is one I think of great importance. I have written to quite a number of surgeons who have had experience in this matter, and I at one time prepared an editorial, or rather a paper on this subject, for *The Railway Surgeon*, in which I tried to set forth some of the principles that should govern railway surgeons in estimating these damages. After discussing the matter with the manager of *The Railway Surgeon*, who had *supreme* control, it was decided that it was not advisable for us to discuss a question of this kind. Now, it does seem to me, gentlemen, that while this is a question that is of serious importance, it is right that we should discuss it. We have no right to turn our back on a fire that is destroying our building. It is our duty to put it out if we can. We, as railway surgeons, can not afford to go on the witness stand and testify to anything that is not the truth. We can not afford to perjure ourselves for our companies, neither can we afford to go on the witness stand and testify in such a way as will destroy a just claim. It is our duty as railway surgeons to testify as to the truth, let it be what it will. Then comes the question, How shall we determine the value of an

injury? Take, for instance, a party who is injured in the arm. We will say there is a Colles fracture, and that the company was liable for the injury. Now, how are we going to determine how much that is worth, and at the same time be fair to the patient and to the company? This is the question that has been brought out in this debate, as I understand it. It seems to me we can, by accumulating facts which every railway surgeon has an opportunity to do, arrive at a general conclusion as to the value of a certain class of injuries. How are we going to do this? We can not apply any ironclad rule and say that a fractured arm is worth $500, or that a certain limb is worth $1,000, because there is a gradation of variation. One man's arm may be worth to him $5,000, while another man's arm may not be worth half that much. I am speaking now of the money value in different men. Why? Because in one case a man may have an occupation whereby he must use one arm more than another, or perhaps any other member of his body; while in the other case, the man may be able to continue his occupation, making just as much money as he did before the loss of the arm. These are points that have to be considered, and the best method of arriving at them is what we want to attain if possible.

It has been my custom for the last fifteen years to take into consideration first the condition of the patient, and the age. Age has something to do with value. A man, 21 years of age, has an earning capacity, so far as age is concerned, superior to a man of 70 years of age. That would be one factor. We should take into consideration the earning capacity of a man or woman, as the case may be, relative to his or her occupation. One laborer, we will say, earns $500 a year, while another man of higher attainments will earn $1,500 a year. Another will earn $2,000 a year, and still another $5,000. If that party is maimed in such a way as to interfere with his earning capacity, to what extent is he damaged, and that should be a factor in considering the damages sustained by the traumatism. Then again, we must take into consideration in addition to the earning capacity, the expectancy of life which has some bearing on age. Furthermore, we must consider the amount, as the doctor stated in his paper, of actual pain and injury that the party has sustained through traumatism; in other words, the amount of suffering. What is that worth? I have been in the habit of rating a certain amount for suffering sustained by the pauper, just the same as it would be for the millionaire. One would suffer as much as the other, so that the rating is equal or on a level. But the earning capacity of the pauper would be entirely different from that of the millionaire, or of some one whose capacity for earning would be $1,000 or $2,000 a year. Then we must take into consideration the amount of time lost and the value of that time rated on the man's earning capacity, which should be based on his age, his salary, or the amount he could earn if he was not injured. I think if we take these matters into consideration we can approximately at least set a value on a broken arm, based on these three leading principles: Age, value of earning capacity, and the amount of damage that we would fix for the actual amount of pain sustained. But, at the same time, when we go before a jury, these questions are generally fixed by this body, and it is hard for us, with all the care we may take, to go before a jury and convince them as to the fixed amount of value a certain party should have for a certain injury. But at the present time, I think the legal departments of our railroads are largely coming to the idea of settling these questions without going into court, as far as possible, and here is the place where you can use these principles to the best advantage. You can rate up a man's injury approximately close to its true value, so that you can say conscientiously of this man that he has a fractured arm, that he has been off duty for six weeks, and that his time is worth so much a week. We can say there is a certain amount of permanent injury that is worth so much for the balance of his life, taking into consideration his earning capacity. By this method we can arrive at an approximately fair estimate. We should, as railway surgeons, consider these points and keep careful records of our cases. I have records of cases for over fifteen years. I know the length of time the party has been off duty; I know his earning capacity, and know what we have paid him. By taking the average case of fracture of the arm, the average time lost, the average value of time in a certain class of cases, you can estimate the amount within a few hundred dollars of the actual value of each party's time. The main question to settle is this, Should a party be paid for the actual amount of pain they have had for a certain class of injury. One man having a fractured arm will suffer much more pain than another of the same character, because he may be a sensitive nervous man, and consequently suffers far more because of that than the other man who perhaps has more animal nature, and is less sensitive from a nervous standpoint, yet each one loses the same amount of time. So here is a gradation again. I hope we shall hear more on this question. It is one that has not been discussed to any great extent. We can find no literature on the subject except instructions given by accident insurance companies. I feel that it is a subject of sufficient importance for us to discuss and if possible fix a schedule for our guidance in this class of injuries.

Dr. Arthur D. Bevan, of Chicago—I think we are treading on dangerous ground. One of the dangers to the good name of railroad surgery is the danger of allowing railway surgeons to be made tools of by the claim agent department and by the law department. I am sory if I have to differ from the author of the paper and the past speaker, but I should say distinctly that this is not a medical question. It is purely a legal question, and one which belongs to both the law and claim departments. We should not, if we begin our Association with the motto that it is for "the higher order of railway surgery," allow anything of this kind to creep into our work. I may say to you emphatically that I do not believe we should allow railroad surgery to be prostituted to the work of handling this class of cases. We have nothing whatever to do with settling for an injury to a limb or as to the value of loss of life. I speak with some preparation upon this subject because I was down for a discussion of the paper on the best method of determining the value of life where death was caused by accidental means. I have taken some pains to run over the work with some of my legal friends, and without exception they have agreed with me that it is a purely legal question, one which cannot in any way be discussed in a purely medical society. I do not believe that we can do anything more important, or take any more important step in placing this Academy of Railway Surgeons on a high plane, than by recognizing the fact that as railway surgeons we have nothing to do with the legal or claim department. When a man is injured you simply state to the claim or law department the outcome of the injury, and the length of time it will last. It is not for you to determine how much a jury, or judge, or company will allow him as compensation. I therefore wish to take a decided position in regard to this question. There are many chief surgeons here and we ought to discourage the handling and settling of claims by railway surgeons. We ought, on the other hand, to demand that the law and claim departments continue to take these matters in their own hands. Railroad surgery is believed by the public to be notoriously partisan. Your testimony on the witness stand is taken with a great deal of incredulity simply because we allow ourselves to be dragged into this kind of work. We ought to take a decided

stand in this, that all papers read and discussed on these subjects should be recognized as outside of our sphere, as simply being read and discussed because they are of general interest just as any outside matter might be to the physician.

DR. C. K. COLE—I agree with Dr. Bevan as to the relation of the railway surgeon to the patient, the legal department of the road, and to all concerned, and I believe that is true of Dr. Harnden, and the position taken by him, as also Dr. Owens who opened the discussion. The remarks of Dr. Bevan are remarks which have been heard before and on lines which have been somewhat fully discussed in similar organizations to this, and I think we are fully agreed that we should not be partisan, that we should not be biased, that we should give testimony which will be accepted and acceptable to the court and to all concerned, and yet we can not get away from the fact that we have a dual function as railway surgeons. We are executives of the road we represent, but that does not deny to us the privilege of giving fair and impartial testimony. As witnesses we are judicial and I believe, as a matter of fact, we are impartial and non-partisan. I cosnider this a very vital question for this Academy to discuss. I can not conceive of any more important subject and yet it is to my mind a purely medico-legal question. I take it, Mr. President, that it is so important a subject that if we discuss it fully—if we could take the paper read, have it edited and condensed with the discussions already had, we will evolve facts which will enable us to approximately value life in connection with this class of accidents or cases injured upon our railroads. I had it in my mind to make the proposition that the paper and discussions should be epitomized with a view for further discussion at a subsequent meeting. I had intended to discuss the paper itself, but Drs. Owen and Reed have gone over the ground so fully that I hardly feel warranted in consuming the further time of the Academy to say any more than I have.

DR. W. H. ELLIOTT—In the main I agree with what Dr. Bevan has said on this subject, but I do not think the line of the surgeon's duty in this case has been as clearly stated as it might be, and I rise for that purpose. In the law department of the road I represent, they do not ask the surgeon to take any part at all in settling the claims—in fact, he is not allowed to do it. In the directions given to the surgeons, it is distinctly stated that the surgeons have no right to settle claims, nor to make any promises on part of the company, but they are expected to use all honorable means to prevent law suits. Now, I believe the duty of the surgeon is just this: I do not think it is his business to estimate the money value of an injury. I think that is outside of a surgeon's usual capacity, and furthermore, I think if done it will compromise his position. What I conceive to be the surgeon's duty is this, besides stating the extent, duration, and the exact conditions of the disabled party, that it is a medical question, that he should state clearly to both the law and claim departments of the road he represents just how much the injury, if it is permanent, interferes with the man's earning his livelihood, not how much money he can make a day. The surgeon should give the law and claim departments some basis so that they can make their figures. They are to make the figures, and you are to give the information upon which they are to make a settlement. Then too, the medical man is the only one, I think that can state fairly what has been the amount of suffering in this or that case. He has watched by the patient's bedside, gone there perhaps at midnight to give a hypodermic injection, and he knows, he is accustomed to estimating suffering. He is not a doctor if he does not estimate suffering and try to relieve it. He can state, if the patient is a highly nervous subject, that the suffering has been intense, while a laboring man, whose injury seems to be a severe one, suffers much less as compared with the other patient from what you would expect from such an injury. After giving an opinion on these two points the business connection of the railway surgeon with the case ceases.

DR. F. H. CALDWELL, of Sanford, Florida—Ten years ago I told my superintendent when we had a hospital system on the road, that I occupied a dual position. I was an employe of the company and an employe of the employes. They pay so much a month to the hospital fund. It was not a charitable institution, and they had a claim upon me as well as the company, and I declined to take any part whatever in the settlement of claims. It would injure my influence for good with the employes, and it would detract from my confidence which the company had in me, and I did not think I could consistently take any action in this way. The president and superintendent of the road sustained my position and since that time I have had nothing whatever to do with damages. The method pursued by the company I represent is this, that as the papers come into my office with the request for information relative to the nature and extent of the injuries received, I indorse the extent and probable outcome of the injury and return them to the office, and that is the last I know of the matter. The rest is settled by the claim department. I showed Mr. Plant this program, but he had already received a copy of it. I told him of the importance of this discussion, we went over the program together, and he said any discussion should be *sub rosa*. "It is all right for you gentlemen to discuss this matter among yourselves and have a fair judgment as to the amount of damages that should accrue." Dr. Cole has made a point which I think is a good one, that if this discussion should be published broadcast, and an anti-railroad attorney should get hold of it, he would make good use of it before a jury if any of us are called upon (which we are frequently) to testify in cases of this kind. I agree fully with those gentlemen who say that this matter should not be published broadcast; that if we do as Dr. Reed suggests, viz., get up a schedule, if there is any important case on hand, it will be brought before a jury and used against the company. The surgeon's duty to his patient is to get him well, if possible. If called upon to go before the court, his duty is to "tell the truth, the whole truth, and nothing but the truth;" whether it be for or against the company he represents. I tell you, gentlemen, that the onus which comes upon us as witnesses before a jury is due to a very large extent to the fact that it has been demonstrated that a large number of surgeons—I do not say any of the gentlemen present have done it—have shown their preference on the witness stand in favor of the company. The sooner we realize that fact, and the sooner we realize the fact that a plain statement of facts made before a jury is the best, the sooner will our testimony be given weight.

DR. LEMON, of Denver—There is no doubt but that all of us as railway surgeons, when cases get into court, have to give opinions. I have made it a rule, which I consider a good one, to confine my statements to the physical signs alone. I always object to answer the question regarding pain. I do not believe any of us can determine how much pain one patient will suffer over another. That is something we can not estimate at all. That is something we should ignore and simply decline to answer. I have frequently said to lawyers, that is something I can not estimate, but the other signs I can.

DR. REED—I desire to make one correction. Dr. Caldwell said I spoke of a schedule of prices. I did not lay down a schedule of prices, and if that impression was conveyed I did not intend it. I meant a schedule of certain things, as it were, that should govern our judgment as to the amount of value, as, for instance, the age, the occupation of the party, and damages, what is the actual injury sustained; that we should be able to designate how much each one should be given according to the patient's situation. I did not mean to convey the idea that we should have fixed prices. We would have to fix the price on principles, and not on any ironclad plan.

DR. HARNDEN—I think the paper has been misinterpreted somewhat by some of the gentlemen, in that I disclaimed any intention in the paper of our becoming claim agents. I would like to know if there is any gentleman in this room who acts as claim agent or does a claim agent's business. I stated in the paper that we as railway surgeons are to act as advisers, and are not expected to take the place of claim agents.

(To be continued.)

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SATURDAY, FEBRUARY 9, 1895.

A PROFESSIONAL DUTY.

There are certain obligations a man takes upon himself when he enters one of the learned professions. Among the most important of those duties is that of advancing the general good of the profession itself. Every conscientious physician who loves his work for its own sake, must feel that to a large extent his own standing in the community is measured by the general standing of his profession. To make that profession powerful, to make its influence felt in all directions, in which the profession have an interest, organization is a necessity. We must unite for general advancement, general encouragement of our interests, and mutual improvement. Under what banner can we fall into line more appropriately than under that of the AMERICAN MEDICAL ASSOCIATION?

Membership in that ASSOCIATION, is based on correct local standing. No one not a member of a State or local medical society in good repute can become a member of our already great ASSOCIATION. It is therefore evident that the local society and the State society are fostered and sustained by the ASSOCIATION.

Many gentlemen applying for membership in the ASSOCIATION, have been obliged to wait until they had first joined their local society. This is the practical effect of the law, but *there are hundreds of physicians who are not aware that they may join the* ASSOCIATION *by simple application, properly certified by the officers of their local society.*

Will our members each for himself, look into this matter in his local society, and by inquiry find out who are members? Let this matter be pushed in the local societies; the JOURNAL will be made better and better, larger and larger, in equal pace with the growth of the ASSOCIATION. The JOURNAL has already grown to be one of the largest, but we are yet far behind the *British Medical Journal* and the *Semaine Médicale* in the journalistic race for pre-eminence. The medical profession of America more than any other, should have the greatest journal. It is within its capabilities, and within easy reach. Jealousies should be sunk in this matter, for no private publisher can be able to gather the whole profession under his interest, nor so far as we are aware, do any of them expect it.

We urge our members to do their whole duty in increasing the ASSOCIATION membership, at every meeting of their local society, and in six months the work will have been measurably accomplished.

If there is personal feeling, let it slumber; if there have been disappointments, let us forget them; if we want changes in form or matter, let them be urged on the floor where all have an equal voice.

Let us unite as a professional brotherhood, bound by every tie of patriotism, and professional honor!

RELATION OF GOUT AND URIC ACID.

DR. ALEXANDER HAIG, (*British Medical Journal*, Dec. 8, 1894) gives us an extremely simple explanation of the relation of gout to the excretion of uric acid. He finds that when the latter substance is taken into the stomach it acts as a decided stimulant, producing a feeling of buoyancy; this condition is succeeded by depression, disinclination to exercise and headache. The first of these conditions is accounted for on the theory that the uric acid lessens the alkalinity of the blood, and hence this substance is not taken up from the tissues, so that for a time after its ingestion the circulation actually contains less uric acid. Later, when the alkalinity of the blood is restored and uric acid again finds its way into the circulation we have depression and malaise.

DR. HAIG on these premises gives us a theory in explanation of the fact so often noted that many gouty persons improve on a meat diet. This he thinks is due to the free uric acid which such substances contain, and which for a time secures temporary amelioration of the symptoms only to be followed by an aggravation of the disease.

We confess that this view of the matter, attractive and simple as it seems, does not appeal strongly to our judgment. In the first place, if uric acid is absorbed from the tissues, why does it not lessen the alkalinity of the blood, the same as when taken up from the stomach? We do not think that the writer has answered this query. Again, the improvement often noted in gouty subjects, when on a meat diet, is frequently due to the fact that the diet, as a whole is very much lessened.

The logical deduction from DR. HAIG'S theories would be a vegetable diet for gouty subjects, but we

know that many patients are not benefited by such regimen, but on the contrary improve when vegetables are restricted.

The truth is that a number of toxemias are dependent upon perversions in the digestive tract, which clinically can not be differentiated from the ordinary forms of uric acid poisoning, and these are often greatly modified by changes in the quality of food. Some patients can not digest fats, others must avoid starches and sugars, while still another class can take proteids only in certain forms.

In the treatment of the uric acid diathesis, too little attention has been paid to the absolute quantity of food taken. It is of little consequence what diet is given, provided the digestive tract is healthy and free from fermentations. To avoid uric acid production we need only reduce *luxus consumption* to the vanishing point.

POLLUTION OF NAVIGABLE STREAMS.

House bill, No. 8481, which provides for the appointment of a Commission to investigate the subject of the contamination of such lakes and streams as are the source of water supply to more than one State, still slumbers in committee so far as we are informed, and a petition was introduced into the Senate February 20, from the Pennsylvania Board of Health praying for the passage of the bill.

We are not advised of the exact text of the bill, but it is evident that some measure of this kind should be enacted. Were there a Department of Public Health, all such investigations would naturally fall under its scope, but in the absence of such a Department, special legislation is necessary.

The British Rivers Pollution Commission, instituted by Parliament many years ago, set an excellent example of what such a commission could do to advance the interests of public health, by ascertaining facts and making recommendations for the securing of pure water supply. In this country, work of this character has been done by the Massachusetts State Board of Health, the Illinois State Board of Health and perhaps others, but this work was necessarily limited to State waters, with exception perhaps of the investigation of the waters of the Illinois River, which emptying as it does into the Mississippi, was an object of some solicitude to the good people of St. Louis and other places in Missouri.

But it is obvious that the water of such rivers as the Ohio, and the Mississippi, where the river itself constitutes the State boundary of many States, should be investigated by impartial authority. That authority can only be found in the general government, and as the population deriving water supply from rivers is steadily increasing, there is a more pressing need for action each year.

Let there be created a Department of Public Health!

LICENSE OF HOSPITALS.

Moved thereto by the inadequacy of existing laws and ordinances to deal with the rapidly growing brood of "faith curists," "Christian scientists," *et hoc genus omne*, and more directly by the difficulty of suppressing a notorious fraud, the "REV." JOHN ALEXANDER DOWIE—a "faith healer" who has been successively, but not successfully, tackled by the State Board of Health for practicing medicine without a license, by the city authorities for maintaining an unsanitary establishment and concealing deaths occurring in his "tabernacle," and by one or more of his victims for obtaining money under false pretences—the Health Commissioner of Chicago, DR. ARTHUR R. REYNOLDS, has succeeded in procuring the enactment of a municipal ordinance the enforcement of which should make short work with this tribe.

It forbids the establishment or maintenance within the city limits of any hospital, other than those of the United States, of the State, the county and the city, except upon license of the Commissioner of Health, who is empowered to make "strict inquiry" into the location of every hospital, the purpose for which it is conducted or maintained, its fitness for such purpose, the nature and kind of treatment given and the qualifications of its chief physician or surgeon under the laws of the State; and to issue, refuse or revoke a license upon the facts disclosed by such "strict inquiry." The chief physician or surgeon or superintendent shall make a report to the Commissioner on or before the fifth day of each calendar month, showing a complete record of such hospital during the preceding month, including the number of inmates received, discharged and died during the month, the causes of deaths and such other information as may be necessary to an intelligent sanitary supervision of the establishment.

For the purposes of the ordinance a "hospital" is defined to mean any place used for the reception or care, *temporary or continuous*, of the sick, injured or dependent (including women awaiting confinement) or used for the treatment of mental or physical disease or bodily injury. Under this definition it is held that "faith cures," quack "dispensaries" and "institutes," "massage parlors," "anatomical museums," lying-in establishments, opium and drink "cures," and kindred institutions must obtain licenses and come under the supervision of the Department of Health, or cease business.

The beneficial scope of the ordinance cannot be overestimated. Its judicious enforcement should largely reduce the aggregate of swindling under the guise of medical and surgical treatment, of the notorious immorality of the "massage parlor" and of the butchery of young women and infants in the dens of procuresses licensed as midwives. Reputable establishments will no doubt welcome the enactment, and it may be profitably copied by other communities.

MEDICAL COLLEGE "NOTES AND COMMENTS."

By the omission of a reference number preceding the Atlanta Medical College, in the table of Medical Colleges on page 60 of the current volume of the JOURNAL (issue of January 12) the "Notes and Comments" on pages 61 and 62, are made to refer erroneously to the respective colleges by one minus number each. Thus, the "note" numbered 9 should refer to the Atlanta Medical College, and "note" 10 to the Southern Medical College and similar transpositions throughout. As, for example, the note to the Woman's Medical College of Pennsylvania, numbered 36, which reads: "Partly due to the fact that we began our compulsory course next year," etc.; the note numbered 37 belongs to this college and reads: "The recent reduction in the number of students was probably due to the lengthening of the course of study to four years and the advance in the standard of entrance requirements adopted by the college." As the Registrars of one or two colleges—DR. WILLIS G. TUCKER, of the Albany, and DR. R. F. RUTTAN, of the McGill—have been kind enough to point out, the article will be used for reference and no usual correction will be noticed; therefore, and in compliance with requests from others interested, the table and notes will be republished in full in an early issue of the JOURNAL with the comments identified by the college titles.

The returns of the Albany Medical College, made Nov. 1, 1894, were noted at that time "not complete." Under date of the 1st inst., DR. TUCKER furnishes the revised list of attendance, as follows: First-year students, 84; second-year, 54; third-year, 58; total attendance, 196—as against 173 for the last previous session.

DR. RUTTAN, Registrar of the Faculty of Medicine of McGill University, also furnishes a revised list of the same date, as follows: Total attendance, 401—there being 121 in the second year, and 72 in the fourth year; the total attendance at the last previous session was 350.

CORRESPONDENCE.

The Practical Importance of Well Established Facts in Therapeutics.

To the Editor:—In order to explain the undeniably miraculous effects of the large dose of alcohol by which on the Alps I was restored from a condition of profound general prostration to one of ability and health, Dr. Davis is obliged to ignore his so-called established facts as regards depression of the nervous system, the diminution of muscular force and the alteration of blood consequent on defective oxygenation and retarded metabolism, and to be driven back on its supposed anesthetic action on the partially sensitive vagus and the insensitive vasomotor nerves. He thinks a dose of chloroform or ether would have produced the same effect. I do not think so. With chloroform I should have been put to sleep never to awaken again. If my vagus and vasomotor system required a sedative it must have been supplied by healthy blood, for as soon as the circulation was restored and my extremities became warm, the sickness disappeared and my muscles recovered all their power. But the established facts of Dr. Davis are the effects only of the misuse of alcohol. They are seen in perfection in the drunken man. Before the days of chloroform I was present at an operation when the patient was carried from the operating table unconscious from the supposed effect of the shock. He awoke some hours after and to the astonishment of his attendants he asked when the operation would begin. He had fortified his courage by a bottle of brandy without the knowledge of the surgeons and the anesthesia was not limited as in my case to his vagus and vasomotor nerves. It should never be forgotten that the effects of alcohol are not solely determined by the quantity administered—a quantity more than sufficient to make a healthy abstainer drunk might be useless in a case of great exhaustion. It is essential that its effects should be estimated less by the quantity than by the condition of the patient. The effects of small doses must be our guide. This subject was treated by Professor Cerna of Texas, in a very exhaustive manner only last year, *Therapeutic Gazette*, 1894). He says: "In small doses alcohol excites the puerperal and sensory nerves, stimulates the cerebral functions, increases reflex action, increases cardiac action by direct contact with the heart itself, causes a rise of arterial pressure, raises bodily temperature, is a conservative of tissue and a generator of vital force and may therefore be considered as a food."

I was an assistant with Dr. Edward Smith and I can personally testify that small doses of alcohol increased the respiratory action and the evolution of carbonic acid. I am also satisfied that to be favorable, the administration of alcohol must be so adapted to the condition of the patient that the established facts of Dr. Davis shall be conspicuous only by their absence.

But let me endeavor to eliminate the question of nervous irritability by the relation of an experience which must be common to the majority of medical practitioners.

Forty years ago the large towns in England were annually devastated by typhoid fever. In 1846, one-fifth of the entire population of Leicester had the fever. We had then no clinical thermometer. The diagnosis had only just been made and was not universally accepted. We had no trained nurses and an abandoned prison was used as a temporary hospital, of which I had charge. At the end of the year I published an account of 186 cases treated with the cold wet sheet and my mortality was 30 per cent. less than that of my colleagues in the hospital. Typhoid fever was then far more serious, far more infectious, far more fatal than it is to-day. The daughter of a farmer living in an isolated farm house in the forest came on a visit to the town. She contracted typhoid fever and was taken home. She recovered, but both her parents had it and the farm servant died of it. The undertaker who lived in the village more than a mile away, caught the disease which spread to his family and neighborhood. A blacksmith lived at a solitary house on the turnpike road. His son, a youth of 12 years, was employed as errand boy to fetch medicines and medical comforts for many of these patients and he took the fever. During this epidemic, I lost half a pound daily for one month. I paid this boy a visit at 10 o'clock at night. He was in the fourth week of the attack. I found his parents sitting by his bedside awaiting his death. He had taken no food for several hours and they said he could not swallow. He lay before me unconscious, his eyes half closed, his lips black with sordes, his tongue like a piece of red mahogany, his pulse imperceptible, his extremities cold, the respiration slow and shallow, the stomach tympanitic and the evacuations were

passing under him. Nevertheless there were no râles in the lungs, and the heart was still fluttering. I sat by the patient for three hours, and I gave him brandy; at first by drops, lest I should choke him and in order that he might rather inhale than swallow it. Then I gave it by the teaspoonful, and before I left he had taken half a pint. Little by little, the circulation was restored, the extremities became warm and life became a possibility. Beef tea and brandy formed his diet for a week and his recovery was eventually complete. Does any one seriously believe that this result would have followed the administration of milk or milk and water?

Now, sir, these were not the symptoms of nervous irritation but of a profound prostration of the nervous, circulatory, respiratory and vasomotor systems and due first to the poison of typhoid, and second to the paralysis of assimilating power and the drain from the intestinal mucous membrane. The alcohol, large as it was when compared with the weight of the patient's body, produced none of its *well established* ill effects. It did not make the coma more profound. It did not interfere with the absorption of oxygen, it did not retard metabolism and it did not lessen the heart's action. But according to my view and the experiments of Dr. Cerna, it acted as a food which needed no digestion, no assimilative process. Indeed, it was taken when digestion was no longer possible, and being absorbed by the force of mechanical diffusion it was carried into the blood, then sent directly to the heart which it stimulated to increased action, then to the lungs, where it supplied the material for heat production.

Under the stimulus of warm blood every part of the body was excited to renewed vigor. The brain was aroused from its lethargy of impending death, the vasomotor system was forced into new action, the capillaries made blood from the wasting muscles, digestion recommenced, and all these actions were begun and continued under the use of this marvelous remedy.

With respect to the treatment of pneumonia and the effect of alcohol in my own case, Dr. Davis asks what I would say in regard to the case of an elderly physician who was promptly bled and treated according to the antiphlogistic system and nevertheless lived to a ripe old age? To which I would say, that this treatment would have been well adapted to my own case, and that modern physicians have carried their fear of venesection to a ridiculous extent. With dullness and fine crepitation in all the right lung and in the left also to the level of the fourth rib, with excessive rusty sputum, with great congestion and distension of the right heart, and a rapid intermittent pulse, threatening paralysis or as it is now called "failure," there was every indication for the relief which venesection undoubtedly affords. Surely it is wiser and safer to diminish the congestion by this means than to allow the blood to fill up the pulmonary vesicles and to force its way outward through the bronchial mucous membrane. But failing this very reasonable practice, the only way left was to stimulate the heart so as to force the circulation and overcome the difficulty. The administration of alcohol immediately steadied the action of the heart, stopped the intermissions, reduced the frequency of the pulsations, and increased their power; and thus by improving the general circulation the lung congestion was relieved. This was all it did and rest, nursing and good constitution did the rest. But I believe that these would have failed without the assistance of alcohol.

Now sir, I am not so ignorant as to regard longevity as a test of the value and effects of alcohol. Unusual longevity is to be found in every condition and rank of life. Men obtain great ages *in spite* of bad habits, bad surroundings and injudicious treatment. But I think it worth noting that a physician could hardly use a drug for over fifty years without detecting some of the evil effects attributed to it by Dr. Davis, if such in reality occurred. I agree with Dr. Davis that the effects of alcohol on the living body require something more than the impressions of an anesthetic patient. I would commend the experiments of Cerna to his special notice. But there are cases like those I have ventured to describe, where the conditions are definite and the results clear and indisputable. In these cases the margin of error is extremely small, and if you should think further illustrations are required, I could certainly prove its value as a therapeutic agent in a variety of morbid states, with the same certainty that attaches to the administration of an ordinary aperient or a dose of morphin.

Yours very obediently,

J. H. STALLARD, M.D. Lond.,
M. R. C. P., M. R. C. S.

A Further Contribution to the Subject of Malaria as a Waterborne Disease.

WASHINGTON, D. C., Feb. 1, 1895.

To the Editor:—In your issue of January 26 last, is an article entitled, "A Further Discussion on Malaria, a Waterborne Disease," by Dr. W. H. Daly, Pittsburg, Pa., which treats of malarious waters as a new idea, and at its close gives a bibliography of the subject, beginning with a paper published in the *Medical Record*, September 15 last, and enumerating nine other articles which have appeared since that date. This might lead some of your readers into the mistake of supposing that anterior to that issue of the *Medical Record* this question had received no attention from the medical profession. Medical officers of the Army by their service in various parts of the country have the incidence of endemic disease placed strikingly before them, and it is not therefore a matter of surprise that they should have given much attention to the propagation of endemic fevers. Dr. Daly will find a full discussion of the prevalence of malarial remittents at Fort Bridger, Wyoming, and the grounds on which they were referred for causation to malaria in the water supply of the garrison in an article on "Mountain Fever and Malarious Waters," *American Journal of Medical Science*, Philadelphia, Pa., 1878, n. s. LXXV, pp. 17–43. He will find a full discussion of the subject also in a chapter on the etiology of the paroxysmal fevers in Part III, of the "Medical Volume of the History of the War," and in the Reports of the Committee on Water Supplies of the American Public Health Association, in the volumes of the reports and papers of that Association, as also in the articles "Malaria" and "Water," in "Wood's Reference Handbook of the Medical Sciences."

For several years past, medical officers of the Army have been reducing the malarial sick rate and building up a new reputation for military posts that were formerly regarded as specially insalubrious, by providing pure water supplies for the men under their care. Particularly at certain of the Texas posts has this been done, as at Forts Brown, McIntosh, Ringgold and Clark. The report of the Surgeon-General for the year ending June 30, 1892, makes special mention of this in the following language:

"In the report from this office for the fiscal year ending June 30, 1890, which summarizes the statistics of sickness at our military posts during the calendar year 1889, the remark was made (page 37) that if Fort Brown, Texas, were expunged from the list of our military stations the prevalence of malarial disease in our Army would be greatly reduced. Fort Brown has not been abandoned, but its malarial record has been expunged, with a consequent material lessening of the malarial rate of the Army. During the calendar year 1889, the post had an admission rate for malarial disease of 1,676 and a non-effective rate of 38.58 per thousand of strength. During the year 1891 the corresponding rates were 16.13 and .35. This change which practically alters

the status of Fort Brown from that of the most unhealthy to one of the most healthy garrisons in the Army has been accomplished solely by the use of a pure water for drinking and cooking, an accidental consequence of the introduction and use of an ice machine. Formerly the water supply was pumped from the river into settling tanks and distributed for use. It is so pumped and distributed now for general purposes; but the water for cooking and drinking is obtained from a steam condensing coil connected with the ice machine. Distilled water was introduced in 1890 and the extraordinary change in the health of the garrison can be attributed to nothing else than to its use; for all the other sanitary conditions and surroundings of the post remain as they were during the years of insalubrity and high rates."

Fort Ringgold, Texas, gives corroborative testimony to the foregoing. Here distilled water was introduced in 1886. The post surgeon considers that its use has reduced the sick rate one-half since that time, and that most of his admissions for malarial disease are among troops whose duties have taken them away temporarily from the post. As a matter of published record the admissions at this station have fallen from 2,304 per thousand of strength during the calendar year 1885 to such rates as 562 in 1889, 865 in 1890 and 1,366 during the past year. Respectfully yours,

CHARLES SMART, Major and Surgeon, U. S. A.

Morphinism in Children.

BROOKLYN, N. Y., Feb. 1, 1895.

To the Editor:—I am desirous of adding to the clinical literature of morphinism in children. If any reader of your JOURNAL has noted a case, and will furnish me details, I will appreciate the favor and give full credit.

J. B. MATTISON, M.D.

BOOK NOTICES.

Clinical Gynecology, Medical and Surgical, for Students and Practitioners. By eminent American teachers. Edited by JOHN M. KEATING, M.D., LL.D., and by HENRY C. COE, M.D., M.R.C.S. Illustrated. Cl., pp. 994. Philadelphia: J. B. Lippincott Company. 1895.

This volume contains articles by the late William Goodell, William H. Baker, Francis H. Davenport, Hunter Robb, Bache McE. Emmet, Barton C. Hirst, Matthew D. Mann, William M. Polk, J. Whitridge Williams, Henry T. Byford, Paul F. Mundé, Herman J. Boldt, Henry C. Coe, William T. Lusk, Chauncey D. Palmer, Chas. Jewett, and John Polak, Edward E. Montgomery, Dudley P. Allen, Louis A. Duhring, and Milton B. Hartzell.

The surviving editor, Dr. Coe, states that owing to the untimely death of Dr. Keating, the completion of the work devolved upon the present editor, who has as far as possible carried out the plans and wishes of his lamented predecessor. While seeking to preserve that coherence which is desirable in a text-book, he has in the main allowed each contributor to consult his own judgment with regard to the arrangement and phraseology of his article, believing that in this way the individuality of each would best be preserved. The introduction is of unusual interest as the last printed words of the late Prof. Wm. Goodell, and he has assumed unconsciously the reminiscent and prophetic vein. We can give our readers no better idea of his style on this occasion than by quoting his own words:

"One advantage accruing to the writer of an introductory lies in the circumstance that he is not limited to any given text or narrowed down to a special topic. Untethered to thesis or theme, he can range at large over the whole field of the subject-matter and treat it pretty much as he pleases. Now as Mentor he can preach his homily; now as pupil he can con his hornbook.

"In this survey of gynecology I shall not hesitate to borrow from my previous writings on the subject, without credit and without stint. I shall also use the pronoun of the first person, not from egotism, but in order to invest my own views with that personality which the editor has urged all his collaborators to assume. Nor, on occasions, shall I hesitate to show myself a proselyte of the gate—one who does not wholly yield up his creed to all the articles of orthodox medical belief, or subscribe to all the obligations of its ritual.

"With the ancients the Golden Age was in the past. With us it looms as the promise of the future; and indeed a great future lies before us. At the brink of the twentieth century let us look back upon the one that is fading away, and a truly wonderful one it has been."

And then the writer follows with a hasty but comprehensive review of the gynecology of the century now drawing to a close. We think him too sweeping when he asserts that the scientific treatment of appendicitis, of perityphlitis and of all intestinal and visceral lesions have come from the advances in gynecology. The truth is that modern abdominal surgery including gynecology proper, has come as a result of the immortal discoveries of Pasteur and the consequent technique of Lister. The writer of this remarkable introduction makes one of the most powerful appeals for the preservation of the ovaries, and as a citizen and patriot not less than a physician, he inveighs against the custom of the time by which the propagation of children has almost ceased to exist in our Anglo-Saxon stock, and he strongly urges conservatism in the use of the knife (see page 20) for ailments very frequently having their origin in the nervous system rather than in the reproductive organs.

"Nerve-strain," says our author, "or nerve-exhaustion comes largely from the frets, the griefs, the jealousies, the worries, the bustles, the carks and cares of life. Yet strangely enough, the most common symptoms of this form of nerve disorder in women are the very ones which lay tradition and dogmatic empiricism attribute to ailments of the womb." (Horace summed up these worries in the phrase, *res angustæ domui.*)

The other chapters in the book are written from a clinical standpoint, and are the views of men of great experience as will be seen from the list above given. The work is systematic and we feel sure that it is as a whole the equal of any similar book, and in many respects it is immensely superior to any gynecology recently issued. The surgery of the rectum and anus, and of the breast is given respectively by Dr. Montgomery and Dr. Allen.

Surgical Pathology and Therapeutics. By JOHN COLLINS WARREN, M.D., Professor of Surgery in Harvard University; Surgeon to the Massachusetts General Hospital. Illustrated. Cl., pp. 832. Philadelphia: W. B. Saunders. 1895. Price $6.

Instead of dedicating this book to anybody, Professor Warren has the following motto from the Georgics of Virgil:

> "*Felix qui potuit rerum cognoscere causas*
> *Atque metus omnes et inexorabile Fatum,*
> *Subjecit pedibus strepitumque Acherontis avari.*"

Which Dryden has freely translated:

> "Happy the man who studying Nature's laws
> Through known effects can trace the secret cause,
> His mind possessing in a quiet state
> Fearless of Fortune and resigned to Fate."

The book is divided into thirty-two chapters beside the appendix as follows: I, Bacteriology; II, Surgical Bacteriology; III, Hyperemia; IV, V, Simple Inflammation; VI, VII, VIII, Infective Inflammation; IX, The Process of Repair; X, Gangrene; XI, Shock; XII, Fever; XIII, Surgical Fever; XIV, Septicemia; XV, Pyemia; XVI, Erysipelas; XVII, Hospital Gangrene; XVIII, Tetanus; XIX, Hydrophobia; XX, Actinomycosis; XXI, Asthma; XXII, Glanders; XXIII, Snakebite; XXIV, Tuberculosis; XXV, Surgical Tuberculosis of Joints; XXVI, Tuberculosis of the Soft Parts; XXVII, Diseases of Bone; XXVIII, Tumors; XXIX, Carcinoma; XXX, Sarcoma; XXXI, Benign Tumors; XXXII, Aseptic and Antiseptic Surgery.

The appendix contains articles on the blood serum therapy in rabies; tetanus; treatment of cancer; methods of pre-

paring erysipelas toxin; examination of tumors; staining methods—tumors; so-called parasites of cancer; decalcification of bone. There are 132 illustrations in the text and 4 full page plates.

It is thus seen that the scope of the book is limited strictly to the subjects included in its title. It therefore can not take the place of the more elaborate works on pathology or bacteriology, nor does it assume to do so. The teaching is quite in accord with modern advanced views, but if the author has a leaning it is always in the direction of conservatism. He is always guarded and makes positive assertions only where the proof is undoubted, and usually produced.

In regard to the Lustgarten bacillus he says:

"The question of the microbic origin of syphilis has been extensively discussed and investigated, but as yet no definite conclusions have been reached which are generally accepted by bacteriologists."

In regard to the cause of inflammation our author, as we think properly, denies the extreme view of Heuter that all inflammations are due to bacteria, and he recognizes mechanical violence, and chemic action including heat and cold, as agents in the production of certain inflammations.

While usually quite clear there are occasional obscurities, thus on page 162 the author says: "Nearer the central point of the inflammatory process the cut surface has a pork-like aspect." We confess with due humility that we do not know what a "pork-like aspect" is. The chapter on the process of repair is admirably written both as to matter and form. We think, however, the writer is in error where he attributes the priority in the application of the double ligature in tying the larger vessels, to Senn and Ballance and Edmunds, for Prof. Moses Gunn long ago taught that method, and in 1870 formally proposed the "constricting silver ligature" as a substitute for ordinary ligation in innominate aneurysm. The purpose in the case mentioned was not the same as that mentioned by our author on page 254, but the principle was clearly enunciated of occluding the vessel by approximation of its walls without rupture.

The chapters on tumors are excellent and interesting. In regard to the Coley treatment of inoperable sarcomata the author says: "The experience of many prominent surgeons with this method of treatment has not been satisfactory. There is little doubt that it is of little if any value in the treatment of carcinoma. The fact that a considerable number of cases of sarcoma have been benefited by this treatment, and that a few have been cured renders it desirable to experiment further in this direction."

To aid in the correction of the next edition, we note a few errors of proof reading, among them "Kelbs" instead of Klebs, page 67, and "Recklighausen," page 87. These are scarcely worthy of notice as they are such as might occur in any work. It might seem a little perfunctory to devote so much space as is here given to the subject of hospital gangrene, a disease that in the present day has only a historical interest, but as it might possibly "come again some day" when the germicides are away, perhaps the chapter is not altogether in vain.

We congratulate the author on the production of an admirable book, alike creditable to himself and to American surgery, and we venture to predict its entire success. The field was ready, and this work will well occupy it, until a more recent favorite shall appear upon the scene.

Fourteenth Annual Report of State Board of Health of New York.

This report, which is for the year 1893, was transmitted to the Assembly by the Governor February, 1894. It consists of two volumes of 869 and 510 pages respectively and a volume of maps. The report gives in detail a statement of the work performed and of all expenses connected therewith. The Board invites attention to the annually increasing amount of work done. The report justly gives credit to the work of the U. S. Marine-Hospital Service. It says:

"Owing to active and efficient work on the part of government inspectors abroad and at ports of embarkation, cholera, which broke out in Western Europe in the spring with renewed vigor, did not gain a foothold in this country."

The Board, however, were not idle, for the threatened invasion caused greater activity on the part of all employed in the health service of the State. Great advancement of hygiene throughout has resulted not only in the prevention of a threatened epidemic, but in the public education and better appreciation of sanitary science, and its practical application. One of the most important duties of the Board consists in the examination and approval of submitted plans for systems of sewers, sewage disposal and water supply of villages, towns and cities throughout the State, and a great portion of the report is properly taken up with a detailed statement of these examinations. The vital importance to the public of the water supply, and of sewage disposal, has created the need for such work by a properly constituted board, and it is impossible to place an estimate on the value of such service. The New York Board is doing excellent work and the report well illustrates it.

PUBLIC HEALTH.

Smallpox in Iowa in 1894.—Dr. J. T. Kennedy, Secretary of the Iowa State Board of Health, in reviewing the health of that State during 1894, says that more than twice the number of cases of smallpox occurred than ever before in the history of the State, in any one year, and the casualties therefrom have been greater. Chicago has been a constant menace, and has furnished nearly all the initial cases. The disease appeared at over twenty different points, and the aggregate number of cases has been over one hundred. At scarcely any point, however, did the disease get beyond the family originally attacked, and at only two points, New Hampton and Pacific Junction, was there any considerable number attacked. Dr. Kennedy compliments the local health boards for their prompt compliance with the rules and regulations of the State Board, whereby the disease was "remarkably well handled" respecting quarantine, disinfection and vaccination.

Physical Training of Youth.—A writer in the current number of the *Atlantic Monthly*, after analyzing the various systems of physical training in vogue in the public schools of a number of American cities, comes to the conclusion that no one of them is exactly suited to the requirements of American youth—that the aims of mere muscular development and military action and bearing dictate to a harmful extent the character of the exercises which obtain favor in our schools; and adds: "It is not too much to expect that the character of our physical training will shape in a certain measure the destiny of our nation, for history is emphatic in proving this of other times and peoples; and so it behooves us calmly to examine our ideals, and see if the highest that can be kept in view, considering our peculiar needs, are not those of self-poise and deliberation, and the grace and strength of mind and body which flow from them."

Booming the Crematory.—*Florida Health Notes* begins, in the January, 1895, number, a collection of original contributions and extracts "bearing on the discussion and growing practice of this disposition of the dead"—to wit, cremation. It learns that the crematory in San Francisco is so crowded with business that it has to refuse three out of ten offerings made; and a sanitary conference, composed of more than one hundred physicians from all parts of the State, recently passed a resolution declaring emphatically in favor of cremation and urging that it should become the national method of disposing of the dead. In Boston the records of the Massachusetts Cremation Society, whose crematory is near the Forest Hills Cemetery, show that up to June 1, 1894,—that is, five months after the opening of the crematory—there

were forty incinerations, the number constantly increasing each month. In May there were sixteen in all. "Socially considered, all classes of people have been represented in this new mode of disposing of the dead here, and all ages—from 94 to 5 years—figure in the official entries of cremation. The system is a perfect success, and the average time required for the complete reduction of the body to ashes is about one and one-half hours."

Antitoxin Production.—The New York City Board of Health is increasing its antitoxin "plant." A new laboratory, to cost $5,000, is being fitted up at the Willard Parker Hospital, at the foot of East Sixteenth Street and will be in readiness in a short time.

Asiatic Cholera.—A cable dispatch of the 2d inst. reports that cholera has broken out at Pera, a suburb of Constantinople. The disease is practically at an end in the Argentine Confederacy, where the most vigorous measures were resorted to—even to burning infected houses with their contents.

An Epidemic Predicted.—Colonel Maurice calls attention in the *United Service Magazine* to the Chinese claim that there are 500,000 men massed around Pekin. This force has already been there for some time, and it is likely to remain for several months longer. It is an elementary maxim of military tactics that a large force of men should not be gathered until a short time before they are to be employed; otherwise an epidemic, resulting from enforced lack of sanitary arrangements, is almost inevitable. Therefore, the writer predicts that as soon as warm weather begins in the spring there will be a most frightful outbreak of pestilence in some form or other, probably in many forms, but beginning with malignant typhus in its most virulent shape. Colonel Maurice suggests that while there is yet time all foreigners in Pekin be withdrawn under adequate protection.

Smallpox.—During the first thirty-six days of 1895—January 1 to February 5 inclusive—there were 222 new cases of smallpox reported in Chicago, a daily average of 6.3. During January the daily average was 6.5; during the first five days of February the average had fallen to 5.2 per day, but the mortality had increased from 17.6 per cent. for the aggregate, to 23.8 per cent. for February; this increase is attributed to the unusual severity of the weather since the first of the month. Remaining under treatment, midnight February 5, in hospital, 116. Reports of the disease in Detroit are conflicting; Health Officer McLeod reported twenty-eight cases under treatment at the close of the month—eighteen in hospital, ten in homes. From unofficial sources it is learned that Surgeon Hutton, M.-H. S., to whom had been tendered the position of Health Officer, has declined the appointment. Secretary Wingate, of the Wisconsin State Board of Health reports, February 4, five new cases and three deaths in Milwaukee during the week ended February 2; total under treatment, forty-three; in hospitals, fourteen; in homes, twenty-nine. There were also six new cases during the week in Greenfield, Milwaukee County.

Quinin in Palustral Fevers.—At a recent meeting of the Paris Therapeutical Society M. Bardet stated that, until lately, quinin salts were administered to travelers who intended visiting tropical or malarious countries. But at a recent meeting of the Paris Therapeutical Society (reported in *Gaz. Med. de Paris*) M. Bardet stated that the number of diseases in which these salts are applicable is diminishing, especially since Ross (India), Miranda-Azevedo (Brazil) and Treille (Algeria) have shown that the tropical bilious fevers are more to be feared than the paludal fevers. These attack especially Europeans living in hot countries whose hygiene is defective and who are given to alcoholic excess. The hygiene of armies sent to these countries should be carefully supervised and the supply of alcoholic drinks interdicted. This gives better results than the prophylactic use of quinin; the latter should be reserved for cases when it is indispensable, as for example, during prolonged stay in low marshy regions. It is necessary to keep in mind the irritating effect of quinin on the digestive tube, which weakens the individual and also renders him insensible to the quinin salts. Ferrand observed that the use of quinin is attended with many inconveniences. For preventive purposes he thought quinquina was preferable.

Artificial Foods and Infant Mortality.—Statistics from the lists of registered deaths in England compiled by Dr. Hugh R. Jones (*Brit. Med. Jour.*) show that 42 per cent. of infant deaths may be referred to digestive disorders. Infant mortality in Norway and Sweden, where almost every child is nursed by its own mother, is but 10 per cent. In Wurtemburg the mortality of breast-fed children is 13.5 per cent., of artificially fed children, 42.7 per cent. In Munich, respectively 15 and 85 per cent. In lower Bavaria, where maternal nursing is the exception, the mortality is 50 per cent. Dr. Hope, Medical Officer of Health of Liverpool, investigated the methods of feeding in 718 fatal cases of diarrhea in children. Of these but 30 were breast fed; 391 were reared wholly on artificial food, while 297 were partly nursed and partly fed on artificial food. Those wholly nursed fare the best, and those partly nursed are better off than those wholly fed on artificial foods. It is clear that maternal nursing should be encouraged, and early weaning and the substitution of artificial foods for the breast-milk should be discouraged; but the tendency is the opposite in all classes of society—a tendency which is increased by the increasing employment of women in industrial and commercial occupations.

Intermittent Water Filtration.—In his report to the Massachusetts State Board of Health on water filtration, Mr. G. W. Fuller compares the manner of operating filters in Europe and in this country, to the advantage of the latter. In Europe the filters are operated with the surface of the sand continuously covered with water, while in this country the intermittent method of operation is usually followed, in which from time to time the water is shut off from the surface for a certain period, the beds drained dry, and the pores between the grains of sand become filled with air. The advantage of the intermittent action is that it provides within the filtering material an additional amount of oxygen with which the bacteria may perform their functions, while the advantage of the continuous action is that, when it is selected, the area of the filter beds need not be so great as for intermittent action. From his experimental filtration of the Merrimac River water at Lawrence, Mass., however, the fact appears that there is no marked difference in the average results obtainable by the two methods, the explanation being that a practically sufficient quantity of free oxygen is held in the water as it flows to the filters; oxygen has never been absent in any of the samples of the effluent from the continuously operated tanks, long series of analyses of the effluents being made from both continuous and intermittent filters.

Cheaper Sulphur.—Sanitarians who believe in the bactericidal properties of SO_2, and followers of that school of medicine whose "third great doctrine" is the psoric origin of at least seven-eighths of all chronic diseases, will rejoice to learn that the great Louisiana sulphur deposit—variously valued at from $30,000,000 to $100,000,000—has finally been made available. This vast mass lies some hundreds of feet below the surface in Calcasieu parish and is overlaid by an immense quicksand, to get through which hundreds of thousands of dollars have been spent and several companies bankrupted without ever getting sulphur enough to make a brimstone match. The last fruitless attempt was that of a Belgian engineer who endeavored to conquer the quicksand by freezing it solid and boring it through, erecting valuable refrigerating machinery for that purpose; but the quicksand would not stay frozen, and that system of mining had to be abandoned. Recently the Standard Oil Company got control of the property and set about mining in a fashion the very opposite to that of the Belgian engineer. Instead of using freezing as the means of getting at the sulphur, it is trying heat. Superheated water is forced

through a ten-inch pipe, on the sulphur, melting it, and the liquid sulphur water is then pumped up. Exposure to the air, so as to evaporate the water, leaves almost pure sulphur. A New York *Sun* dispatch says the experiment has been a success beyond expectations. It was tried for the first time only a few days ago, and several tons of sulphur obtained at the first strike. It has been operated successfully ever since.

Antitoxin Treatment of Diphtheria.—The JOURNAL is indebted to Dr. C. O. Probst, Secretary of the Ohio State Board of Health, for the report of Dr. W. T. Howard, Jr., of the Pathologic Laboratory of the Western Reserve University at Cleveland, concerning the antitoxin treatment of diphtheria at Ashtabula—"the largest series of cases yet treated with the antitoxin in America," so far as the Secretary is aware.

In all, eighty-two cultures were made by Dr. Howard, to-wit: twenty-nine times in convalescent cases to determine whether or not it was necessary to continue quarantine; in twenty-eight instances for diagnosis; and in twenty-five cases treated with antitoxin. In some of the quarantine cases reported, examinations showed the presence of diphtheria bacilli for many days after the disappearance of the false membrane. In these cases the quarantine was not raised until the throat was proved to be free from diphtheria bacilli, a very much safer procedure than the ordinary time limit usually followed. From the results it appears that the diphtheria bacilli disappear from the throat in a shorter time in cases treated with the antitoxin than in cases treated by the ordinary methods.

The twenty-eight cases treated by Drs. Alrich, Dickson, Dorman, Flower, Gilchrist, Morse and Pardee, between Dec. 17, 1894, and Jan. 5, 1895, were divided into four classes, as follows: Mild five, of medium severity ten, severe seven, malignant six. In every case in which the remedy was used benefit was noted. In all but one case the improvement was marked. In mild cases and in cases of medium severity the affected part cleared up rapidly, decided improvement being noted within twenty-four hours. The dosage varied with the severity of the case. The mild cases received from 12 to 20 c.c. of the remedy in all. The amount given in cases of medium severity varied from 35 to 55 c.c. Cases classed as severe received from 28 to 79 c.c. One of the malignant cases received 113 c.c. in five days. The usual initial dose was the contents of one of the phials (22 to 25 c.c.). The further treatment of the case was governed by the severity of the symptoms and the patient's apparent needs. Where it seemed necessary another dose was given within a few hours, but usually the second dose was not given until after twenty-four hours.

Characteristic changes following the injections were fall in the temperature, slowing and strengthening of the pulse with, in some cases, a rise in the arterial tension. Changes in the appearances of the false membrane were marked. Within twenty-four hours it would lose the characteristic dry, dull, and opaque appearance and grayish color, and become pale white or gray in color and moist and somewhat translucent in appearance. Frequently in this time it would loosen and curl up at the edges. In a variable time, from twenty-four hours to several days, the false membrane would separate, often in large masses. The mucous membrane could then be seen to be more healthy in appearance than in cases not treated with antitoxin. Drs. Flower and Dickson lay especial stress upon this point and note the fact in the reports of their cases. After the use of the remedy, often within twenty-four hours, patients were markedly brighter in appearance.

Of the twenty-eight cases treated, three died, a mortality of 10.7 per cent. The three fatal cases are of particular interest:

The first, N. F., a boy of 6 years, had been ill with diphtheria six days before the treatment was instituted. Two weeks previous to this he had had measles, complicated by bronchitis. When first seen there was a thick false membrane on both tonsils, on the pharynx, extending over the roof of the mouth, and in both nares. He was hoarse and could not speak above a whisper; the larynx was evidently involved. The cervical glands were very much swollen. Temperature, 103; pulse, 150, weak; respiration, 30. The prostration was great and the case was looked upon as entirely hopeless. He reacted somewhat to the antitoxin and lived two days after the first injection. Before death, although he was intubated, the respirations were 70 per minute and he evidently had pneumonia. Cultures made from the throat showed diphtheria bacilli and large numbers of the staphylococcus aureus. Clinically and bacteriologically this was a case of severe mixed infection.

The second fatal case is of equal interest. N. C., female, 27 years old, ill six days before antitoxin was administered. She was seen by Dr. Dickson with her physician, Dr. Flower, on the third day. They both thought the case hopeless then. At the time of the first injection of antitoxin, there was a thick grayish-yellow false membrane over the tonsils, pharynx and roof of the mouth. She was hoarse, could not speak above a whisper and complained of pain in the larynx and trachea. The cervical glands were markedly swollen. The pulse was weak, 140 per minute. The face and lips were cyanotic. She had not been able to swallow food for twenty-four hours. Under continued large doses (113 c. c. in all) of antitoxin she showed decided improvement. The false membrane cleared off entirely and the throat was clean by the afternoon of the fifth day after the first dose of antitoxin. That morning her pulse was stronger and better than any time during her illness and it was thought that her chances for recovery were good. That afternoon, suddenly, she became pulseless at the wrist and died in a short time of acute dilatation of the heart. As far as the study of the good effects following the administration of antitoxin is concerned, this was the most interesting case presented for observation. She invariably showed marked improvement after each injection of the remedy and the false membrane disappeared in the most satisfactory manner. She had no local treatment after the antitoxin injections were instituted, except an occasional gargle of a solution of Seiler's tablets. The diphtheria bacillus was found in pure culture in the false membrane.

The third fatal case was that of a baby 4 months old, ill with diphtheria four days before antitoxin injections were given. The rectal temperature was 105; the pulse 120 to 160; the respirations accelerated. A false membrane covered the tonsils, uvula and pharynx. Antitoxin was administered on the fourth day of the disease and was followed by a marked improvement; the throat being clear of false membrane on the third day. The child died, however, on the evening of this day. Cultures which were made just before the antitoxin was given showed the diphtheria bacillus and large numbers of the staphylococcus aureus. The child probably recovered from diphtheria and died of septicemia.

In all of the fatal cases the antitoxin treatment was instituted late in the disease. "In the first two of the fatal cases there was involvement of the larynx and the first and last cases were severe types of mixed infection." The first two were said to be the most malignant of the epidemic and on account of their severity were the first cases to receive the antitoxin. The best and surest results were obtained when the antitoxin was administered within the first forty-eight hours of the disease, though there were several malignant cases which showed rapid improvement and recovered when the treatment was not instituted until the sixth day of the disease.

These experiences have in the main confirmed those of other observers in regard to the efficiency of the antitoxin treatment of diphtheria. They tend to emphasize the experience of most of those who have used it—that the earlier the treatment is instituted the better the results and the smaller the doses necessary, and the additional facts that in cases not treated until late in the disease (third to sixth day or later) and in cases of mixed infection, the best results can not be expected.

Study of the cases of diphtheria in Ashtabula and at the Harbor (where diphtheria was endemic) reported to the Health Department from Jan. 1, 1894, to December, 1894, just before the present epidemic started, shows 114 cases with 19 deaths, a mortality of 16.6 per cent. From Dec. 6, 1894, to January 1, 1895 there were reported eighty-two cases of diphtheria with twenty deaths, a mortality of 24.4 per cent.

In this, as in most epidemics, it is probable that the most severe cases were among the first and that the most susceptible individuals were attacked earliest, but after due allowances have been made for these factors the antitoxin treatment has been followed by a most gratifying lowering of the mortality.

As soon as the supply of antitoxin warranted it, an attempt was made to immunize all individuals in infected houses as far as possible. For a variety of reasons this plan could not be applied to every household. Altogether twenty-five persons were given antitoxin for immunization; of these seven contracted diphtheria, but nearly all had mild attacks. It is not improbable that several of these were already infected at the time of the injection. The amount used varied with the age and body weight, from 1 to 4 c. c. being given. In several cases this was followed by erythema and urticaria. In one case the victim in a few minutes was seized with a violent paroxysm of sneezing, which was shortly succeeded by an attack of asthma. Some hours later this was followed by a troublesome urticaria. But as a rule no discomfort followed the administration of the remedy whether it was used for treatment or for immunization.

With patients receiving the antitoxin, little or no local treatment was used. In cases which were not brought under the antitoxin treatment until late in the disease (third to the sixth day) sprays of hydrogen peroxid or of mercuric chlorid when used were always stopped. As routine treatment in connection with the antitoxin, as cleansing agents and for the mechanical effects, patients were made to use a mild gargle of boric acid solution or a solution of Seiler's tablets, both of which may be regarded as harmless. In some cases, however, even this was omitted. The patients were encouraged to eat, and when their condition called for it, were freely stimulated; for this alcohol and strychnin were chiefly relied upon.

ASSOCIATION NEWS.

The Section of Neurology and Medical Jurisprudence have arranged the following symposiums for the May meeting at Baltimore: Epilepsy, Medically, Surgically, and Therapeutically considered; Hypnotism,and Mental Therapeutics, and its Medico-Legal Relations; Electricity, some new Therapeutic Relations and Questions of Treatment. Short practical papers on these topics are urgently solicited. Other papers on subjects belonging to this Section will be welcomed.

SOCIETY NEWS.

The Bussey District Medical Society held a regular meeting at Tracey, Iowa, January 31.

The Iowa State Medical Society will hold its forty-fourth annual meeting at Creston, April 17–19.

The Capital District (Ill.) Medical Society, at its annual meeting in Springfield elected the following officers: President, Dr. E. J. Brown, Decatur; Secretary, Dr. B. M. Griffith, Springfield; Treasurer, Dr. R. C. Matheny, Springfield.

Ramsey County (Minn.) Medical Society.—The thirty-first annual meeting of this society was held January 28. The following officers were elected for the ensuing year: President, Dr. C. E. Riggs; Vice-President, Dr. Willis E. Hallowell; Secretary, Dr. Charles R. Ball; Treasurer, Dr. A. A. Pine.

The Rome County (N. Y.) Medical Society perfected its organization January 30, by the election of the following officers: President, Dr. C. C. Reid; First Vice-President, Dr. T. M. Flandrau; Second Vice-President, Dr. E. J. Lawton; Secretary, Dr. Calvin B. West; Treasurer, Dr. James Middleditch.

The Medical Society of Southwestern Iowa was organized at Creston, Iowa, January 30. The following officers were elected: President, Dr. B. W. Torrey, Creston; Vice-Presidents, Drs. Cokenower, of Clarinda; E. Potter, of Corning; Stanton, of Chariton; Bosbyshell, of Glenwood; Mulhern, of Greenfield. Treasurer, Dr. Paschal, of Bedford; Secretary, Dr. F. E. Sampson, of Creston. The next meeting will be held in Creston February 21.

NECROLOGY.

V. W. May, M.D., of Lawrence, Kan., February 4.——William Wallace Cook, M.D., of Woodstock, Ill., February 4, aged 39.——Jamin Strong, M.D., of Cleveland, Ohio, January 28, aged 69.——F. W. Ostrander, M.D., of Brooklyn, N. Y., January 29, aged 90.——Dr. Brandt, of Warrenton, Mo., January 15.——A. T. Stephenson, M.D., of Harrodsburg, Ky., January 12.——Heinrich Harpke, M.D., of Milwaukee, January 12, aged 68.——Miles R. Bohannon, M.D., of Lynchburg, Va., January 19, aged 69.——W. A. McCulley, M.D., of Independence, Kan., January 22.——Cyrus Haven, M.D., of Hannibal, N. Y., January 25.——Wm. M. Fee, M.D., of Melbourne, Fla., January 27, aged 73.——Dr. Stover, Wayland, Mo., February 4.——Francis J. Hammond, M.D., Indianapolis, February 1.——Horace Gaylord, M.D., Pontiac, Ill., January 30.

MISCELLANY.

The Philadelphia Medical Club held its annual meeting January 30. The following officers were elected for the ensuing year: President, Dr. Hobart A. Hare; First Vice-President, Dr. Henry Beates; Second Vice-President, Dr. A. K. Minich; Secretary, Lemuel J. Deal.

Monument to Charcot.—The committee appointed to collect funds for the purpose of erecting a monument to Charcot, of which Professor Brouardel is the President, has collected 30,000 francs and as soon as the funds from foreign countries have been turned over, the lists will be closed.

Von Helmholtz' Library.—The German Emperor has ordered his Chancellor, Prince Hohenlohe, to purchase the library of the late Prof. Hermann von Helmholtz for the Imperial Institutes of Physics in Berlin. The library is supposed to be the best private collection of works of their class in the empire.

Jugulation of Pneumonia.—Petresco, of Bucharest, claims to have successfully jugulated pneumonia by enormous doses of digitalis. In 1891 he had treated 825 cases, with a mortality of 2.06 per cent., and in 1893 he claimed to have treated successfully 1,061 cases during the previous twelve years. (*Rev. de Med.*) He gives one to three drachms daily of digitalis leaf in infusion (℥i to ℥viifs), a tablespoonful being given every half hour.

Diagnosis and Treatment of Diphtheritic Angina.—In twenty-eight cases of angina with false membrane, and suspected diphtheria, only eight had the Löffler bacillus, seven had streptococci, five had staphylococci, eight had different microbes, coli bacilli, pneumococci, etc.; of these eight cases, two died. Catrin has practiced in all cases repeated touching every two or four hours with a solution of potassium permanganate (1 to 100). This solution is neither caustic nor painful.—*Revue des Science Medicales*, Jan. 15, 1895.

Treatment of Acute Articular Rheumatism by Malakin.—In a trial made on four rheumatics, Montagnon found that malakin was never harmful even in great doses; that it augmented the quantity of urine; facilitated the elimination of uric acid, and distinctly lowered the temperature; never produced ringing in the ears, or digestive troubles. The ordinary dose is 6 grams in twenty-four hours. It may be carried to 10 grams without danger, in divided doses.—*Revue des Science Médicales*, Jan. 15, 1895.

Cerna, "Notes on the Newer Remedies," 1895, states that malakin (a substance closely related to phenacetin) is best given in wafers or capsules; the single dose is 0.5 to 1 gram, and "for children it can be administered in some kind of fruit jelly, in corresponding doses."

Washington State Board of Health.—The Washington State Board of Health and Bureau of Vital Statistics held its regular annual meeting at Olympia, January 21. Dr. J. B. Eagle-

son, of Seattle, was elected President, and Dr. G. S. Armstrong, of Olympia, was re-elected Secretary. The other members of the Board are Dr. N. Fred Essig, of Spokane, Dr. John T. Lee, of Tacoma, and Dr. E. E. Hegg, of North Yakima. The Board decided to establish a laboratory for bacteriologic and experimental work, and appointed Dr. A. B. Kibbe, of Seattle, Director and Bacteriologist.

Society for the Relief of Widows and Orphans of Medical Men.—The Society for the Relief of Widows and Orphans of Medical Men of New Jersey was incorporated in 1882 and has continued to grow both in influence and membership. Since its organization, 241 physicians of the State have become members; of which number 22 have died, 28 been dropped for various reasons, leaving at the present time 191 active members. The Permanent Fund amounts to $1,338.42, and it is intended eventually to allow small annuities to widows and minor children in cases of need. The amount already paid to the families of deceased members amounts to $2,478. The total cost of running the society during the past year was $19.67.

Syphilitic Gangrene of the Tongue.—At a meeting of the Paris Society of Dermatology, reported in the *Gazette Medicale de Paris*, M. Mendel presented a man aged 55, with gangrene of the tongue very probably of syphilitic origin. The patient presented himself at the Hospital Saint Louis with his tongue enormously swollen and the anterior third, green and pulpy. Two days later this greenish part sloughed off in the form of fetid detritus, and the remainder showed a separated surface already undergoing repair. Two or three similar cases have occurred in carcinoma of the tongue, but it seems probable that in this case we have to deal with syphilis, in the form, possibly, of an unusually large phagedenic gumma. The patient had syphilis in 1882 and has been very poorly taken care of. The characteristic signs of cancer are lacking—cachexia, glandular enlargement, otalgia and spontaneous pains, fetidity and loss of blood.

Suicide of Physicians.—Dr. J. U. Hall, one of the editors of the *Colorado Climatologist*, offers as the causes of the increase of suicide among physicians, first, the proneness of medical men to resort to artificial stimuli when overworked; and, second, the overcrowding of the profession whereby the struggle for existence is made so bitter that many conclude that life is not worth living. In his own State, as member of the Colorado Medical Licensing Board, Dr. Hall has helped to license 2,066 physicians since 1881. The total population of Colorado by the last census amounted to only 442,000. Thus they have in fourteen years licensed one physician for every 213 inhabitants. Dr. Hall adds: "It is needless to say that a large part of these have moved on, and are now trying to find a still easier place. If all had remained, we should have died for lack of sufficient oxygen to support us"—an alternative less objectionable only than suicide itself and no less deadly.

Argon—the New Element.—At the recent meeting of the Royal Institution in London, on the 31st ult., it is claimed that the existence of the new element, discovered by Lord Rayleigh and Professor Ramsey and to which they have given the name *argon*, was fully demonstrated.* It is said that the discoverers have finally succeeded in separating it from the atmosphere on a large scale and have sent a portion to Professor Crookes and a portion to Dr. Olszewski of the University of Cracow, to liquefy and solidify, and that these physicists have found that the new substance gives a spectrum of its own and has its own boiling point, freezing point, critical temperature and critical pressure, all different from those of any other element. The cable dispatch says: "Argon gives two spectra, the red and blue, and it is this which raises a doubt whether the investigators are dealing with one or two substances. If the latter should prove true then there is a new vista opened up, and it is suggested perhaps one of these substances will prove to be Professor Crookes' ideal protyle, the ultimate basis of matter of which all others are only combinations."

* (See this JOURNAL, January 26, p. 136).

Treatment of Syphilis by Mercurial Injections.—Lendin has observed in 106 subjects the comparative action of subcutaneous injections of 1, calomel; 2, salicylate of mercury; and 3, mercuric thymol. Forty-three patients were treated with injections of calomel in doses of, gr. 0.05 to gr. 0.2 (in all 186 injections—100 double and 86 single). Of these forty-three patients, thirty-four were treated with calomel from the beginning; the other nine had been given other medicaments as well. The injections of mercuric thymol (83) and of salicylate of mercury (852) were made in sixty-four subjects, in doses of from gr. 0.05 to gr. 0.1, in the region of the great trochanter. These were poorly borne and were replaced by mercury internally and by inunctions. The reaction caused by the calomel injections was always more pronounced than that following the other salts. Suspension in glycerin produced an abscess in 24.5 per cent. of all cases, while suspension in oil produced only 9.7 per cent.; moreover, large and very painful swellings were produced which greatly annoyed the patients. Injections of the thymol and salicylate, on the contrary, in most of the cases were not followed by any inflammatory reaction, or if any appeared it was very slight; with no abscesses and an elevation of temperature in only fifteen cases. The author concludes (*Jour. de. Med. de Paris*) that calomel occupies the first place in cases treated for the first time, by reason of its rapid therapeutic action; in cases of relapse, on the contrary, there is no appreciable difference between these three salts of mercury.

Liability for Personal Injuries is not Changed by Presence of Microbes.—A novel application of an old rule of law has been made by the United States Circuit Court of Appeals in the case of the Crane Elevator Co. v. Lippert, decided Oct. 1, 1894. This was an action brought to recover damages for personal injuries. The party who instituted it testified that he fell, and struck his shoulder upon some iron. He got up and walked home. He felt some pain in his arm, below the shoulder. It was swollen the next day, but he returned to work, and after working about an hour he went home and went to bed. About four days after, a doctor was called. His arm was then badly swollen. After treatment by two or three different physicians, he went to the hospital, where he was in bed about a month and was operated on by a surgeon, by whom a piece of diseased bone was taken out of his arm. The medical testimony tended to show that, when admitted to the hospital, he was suffering from tubercular osteomyelitis, resulting from the presence of microbes or tuberculous germs in his system; that, if these microbes or germs had not been present in his system, the fall and consequent bruise would not have resulted in the serious injury from which he suffered. The point was, therefore, made by the lawyers that the injury sustained was not the proximate result of the fall, but arose from the presence of tuberculous germs in his system. The court, however, holds otherwise. It says that the wrongful act of the party sued subjected the injured party to other and dependent causes, which were set in motion by the original hurt. It was the hurt occasioned by the fall which afforded an opportunity for the active development of the poisonous germs which had theretofore been innocuous. For this it was answerable. It was the wrongful act which gave rise to the subsequent injury, and it was not apparent that the injury would have occurred in the absence of such cause. The principle applicable is that when there is no intermediate efficient cause, the original wrong must be considered as reaching to the effect, and proximate to it.

The Bubonic Plague at Hong Kong, by Yersin, (*Bulletin Méd.* Sept. 24, 1894) and (*Annales d'l'Institute Pasteur*, VIII, 9.) "Note on the plague by Kitasato," (*Bull. Méd.* Sept. 23, 1894.) 1. The bubonic plague which has raged from the month of May last at Hong Kong presents itself with the symptoms and clinical characters of the ancient bubonic plague, which has been observed from time to time in the East. The micro-

biologic studies which Yersin has made on this occasion were not only made on animals (mice, rats, buffalo and swine) which easily contract the disease, but also on men.

In the pulp of the bubo he constantly found in great quantity a short thick bacillus with rounded ends. The blood sometimes contains them but much less abundantly. The inoculations of the pulp of the bubo, caused the death of the animals with characteristic lesions and numerous bacilli in the glands, the spleen and in the blood. Ingestion of portions of the spleen or cultures gave the same results.

The plague is therefore a contagious and inoculable disease, and according to Yersin the rat was the chief agent in conveying the contagion. In the cadavers of these animals he found a great abundance of the bacilli of the plague and as constantly the purpuric spots. Finally the bacilli have been found and isolated in soil at a depth of four to five centimeters in a locality that was infected and insufficiently disinfected. It is important to note that in certain cultures there may be isolated a variety of bacilli, some of which have lost all virulence for the guinea pig. The researches which Kitasato has made this year on the plague at Hong Kong, have permitted him also to describe the same bacillus and by the inoculations and the cultures to formulate the following conclusions: This bacillus having the form of a small staff, with rounded ends is found only in the blood, bubos and internal organs of plague patients. It is not found in any other contagious disease. With this bacillus it is possible to produce in animals the same symptoms as those presented in man by the same disease. This bacillus which penetrates the human body by the respiratory passages by an external wound and perhaps by the intestinal tract is the cause of the bubonic plague. This plague is therefore a contagious disease produced by a specific bacillus. —Ozenne, in *Revue des Sciences Medicales*, Jan. 15, 1895.

Japanese Army Medical and Supply Departments.—English advices characterize as excellent, the medical arrangements of the Japanese during their present war with China. Their hospital organization at Hiroshima is efficient and a thorough coöperation has been established between their Red Cross Society and the army medical staff and medical staff corps. In the attack and capture of Port Arthur on November 21, the main body of the attacking force of the Japanese army passed through a small hamlet which was afterwards used by the Red Cross Society as one of the chief sites of their advanced field work. The wounded were rapidly brought in from the front, placed on straw and promptly attended to by members of the medical service. There was a plentiful supply of antiseptic agents and dressings; and all the operations were conducted on the recognized principles of antiseptic surgery of Western civilization. Diagnosis tags were attached to the wounded, briefly stating the nature of the injury and what had been done before the wounded were transferred to the rear, and in fact, everything was done in accordance with the principles and methods followed in modern war in Europe. The resistance offered by the Chinese was small and ineffective, and there was therefore no great strain on the Japanese medical organization and arrangements; but the work was well done and very creditable to the Japanese service. Advices which reached San Francisco, January 23 give us other interesting points from recent reports of Surgeon-General Isigaro: The usual winter clothing consists of the regulation jacket, trousers, caps and shoes, with woolen socks and breast clothes, one blanket, besides underwear, etc. They have a thick fur head covering, a fur overcoat, with double lined neck piece and extra flannel undershirt, extra woolen merino drawers and long stockings and extra blanket, gloves made of thick blanketing, a stock of paper underwear and a large fur skin, which may be used on certain duties, as well as for covering. This dress generally goes to officers of rank. The coolies have no protection and are provided with scarcely any pay, but in view of the increasing cold they have been allowed each a flannel shirt, lined coat and trousers, a cotton padded overcoat, a thick flannel head covering, cotton flannel undershirt and drawers, thick socks and a blanket. That the coolies suffer more than the troops is largely due to their improvident habits. They often gamble away their clothing, and, not being subject to the rigid discipline of the army, can not be made to regulate their food and drink properly. The supply of food for the soldiers is very simple. Rice is the basis. The quantity, however, is ample; a quart and a half of cleaned rice per day to each man. One-third of a pound of vegetables is added, with condiments in the form of salted plums, etc. On rapid and prolonged marches, when rice can not be prepared in the accustomed way, the troops are perfectly contented to live on gruel made of rice and Indian corn. The commissary is greatly improved after every victory over the Chinese, for large stores of beef and pork are invariably captured. The Surgeon-General has observed that when on the march and expectant of battle, the armies are cheerfully satisfied with anything that will sustain life. It is only when kept inactive for a long time that their appetites are more exacting. The directors of hospitals in the field state that the wounded almost invariably protest against the use of the bandages made by the Empress and the Empress dowager at Tokio, and beg that the bandages be hung in honor near their pillows instead. The gratification which these marks of imperial remembrance and favor excite is often thought to stimulate the progress of the invalids toward recovery.

Washington Notes.

Medical Society of the District.—At the regular meeting of the society held on the 30th ult., Dr. Wm. P. Mason, of Troy, N. Y., read an essay on "Drinking Water and Disease." He pointed out some facts touching the relation of rainfall and typhoid fever, illustrated by the use of the stereopticon.

The Washington Obstetrical and Gynecological Society.—The regular meeting of the society was held February 1. Drs. H. L. E. Johnson and H. B. Deale read a joint paper entitled "Laparotomy for Ovarian Disease with marked Symptoms in the Digestive System," and each presented specimens from the cases reported. Dr. H. L. E. Johnson also presented a specimen of diseased ovary, and Dr. J. W. Bovee presented specimen from two cases of pyosalpinx and ovarian abscess. The paper and specimen brought out a very interesting discussion.

Smallpox.—There were several cases of suspected smallpox investigated during the week, but all proved to be other diseases. One suspicious case was discovered in the Providence Hospital and caused considerable alarm. The Sister in charge had it properly isolated until it was removed to the suspect camp.

Proposed New Smallpox Hospital.—The Senate Committee has added to the appropriation bill an item of $30,000 for the erection of a new smallpox hospital on the site of the present one. The clause provides that the money shall be immediately available. The Contagious Disease Hospital site has not yet been decided upon. If the name of this hospital were changed to "Isolation Hospital" and the public given to understand the exact class of cases to be treated therein, it would remove a great deal of opposition to its proposed location.

Practice of Medicine in the District.—Senator Harris has presented at the request of the District Commissioners, their substitute bill for the regulation of the practice of medicine and surgery within the District. The bill was referred to the District Committee.

Health of the District.—The report of the Health Officer for the week ending January 26 is as follows: Number of deaths (still-births not included): White, 47; colored, 42; total, 89. Death rate per 1,000 per annum: White, 12.22; colored, 22.98; total, 15.68. Death rate per 1,000 per annum for corresponding week last year, 27.36. Still-births: White, 5; colored, 4; total, 9.

SPECIAL ACT OF CONGRESS FOR A PHYSICIAN.—The House Committee on the District of Columbia reported with a favorable recommendation the bill passed by the Senate relieving and exempting the real estate purchased and conveyed to Grace Roberts, Doctor of Medicine, from the operation of the act to restrict the ownership of real estate in the Territories to American citizens, and remitting all forfeitures by force of said act.

NO VISITING AT THE REFORM SCHOOL.—Visiting at the Reform School is still suspended, and will continue to be prohibited until the school authorities are satisfied that the city is free from smallpox.

POPULATION OF THE DISTRICT.—The police have completed the census of the District and have made their report to the Commissioners. The population of the city and county is 270,514.

TO PROTECT LIFE AND LIMB.—The Commissioners have finally decided upon the pattern of car fenders to be used upon the District street cars. An order was passed February 1 which instructs the car companies to equip their cars with fenders on or before April 1, 1895, under a penalty of $25 per day fine for not so doing. Major Powell, the Engineer Commissioner, has had the matter under consideration for several months, and some ninety odd patent fenders have been examined. The official regulation issued provides that every grip and motor car operated in the District shall be fully equipped with front pick-up fenders of the Blackistone pattern.

NEW SEWERS AND PURE WATER WANTED.—A committee of prominent citizens held a meeting at the Shoreham Hotel on the 1st inst. to discuss the new sewer bill and the purification of water for the District. Drs. Busey and W. W. Johnston made speeches on the subject, urging the importance of prompt action by Congress. Resolutions were adopted touching the subject and will be submitted to Congress at once. Mr. Justice Harlan presided and was directed to appoint a committee of seven members to present the resolutions. The committee will be named in a few days.

Louisville Notes.

SMALLPOX.—Lexington, Ky., now has three cases of smallpox. The first case developed in the person of a stable boy from Roby, Ind., and the other two cases have developed among the stable boys. The first case has proved to be mild, but much apprehension is felt that it may spread further.

CHENAULT.—Dr. R. C. Chenault, recently of Lexington, is seriously ill at his home at Glenview, near Louisville.

ANTITOXIN.—The antitoxin is being extensively used in this city. Dr. W. Cheatham reported three cases in which he had used it, in a recent number of the *American Practitioner and News*. Dr. W. Ed. Grant has used it in four cases, Dr. H. E. Tuley in a case of laryngeal diphtheria and Dr. J. G. Cecil in one case. Full reports of these cases will be made later. We are well supplied with the remedy, several drug houses having received consignments.

SANITATION IN THE WESTERN DISTRICT.—Dr. Frank Corrigan, sanitary inspector of the district of Louisville, has submitted his report to the Health Officer. There were 1,601 vaccinations, 173 charity calls, a daily visit to the almshouse, no smallpox cases, and less diphtheria than at any time in twelve months.

MORTALITY REPORT.—The report for the week past shows a total of fifty-eight deaths, of which forty-five were white, thirty-three male, and twenty-eight were natives of Louisville. Pneumonia led with twelve fatalities and consumption next with eight. During the month of January there were 296 deaths, of which 223 were white, 153 male, and 129 natives of Louisville. During the month there have been sixty-four deaths from pneumonia, twenty-nine from consumption, twenty-one from organic disease of the heart, twelve from typhoid fever, and twenty-four stillbirths. Two of those who died were over 100 years old. There were thirteen deaths at the City Hospital.

Annual death rate per 1,000, 15; white 14; colored, 23; for month, white, 13; colored, 2. Corresponding month last year, 293. During the last two months 3,960 were vaccinated.

DRUGGISTS' LIQUOR LICENSE.—The druggists have abandoned their fight in the legal test of the law requiring them to pay a license of $50 for selling whisky. The intention was to carry the case to the United States Supreme Court after the reversal of the Fowler case by the Court of Appeals, as recently chronicled in these columns, but they have abandoned this idea, paid all costs and announced that no appeal would be taken. The Auditor will in a few days send out notices to all druggists to pay for the two years during which the license law has been suspended, pending litigation, and it is expected that not less than $25,000 will come into the State treasury from this source.

Hospital Notes.

THE COUNTY HOSPITAL at Arvilla, N. D., was destroyed by fire January 28. The loss on the building was $12,000; on furniture and fixtures $3,000; insurance $2,500.——The Reineman Maternity Hospital, at Pittsburg, was formally opened January 29.——The ladies of the Mercy Hospital Association of Sioux City, Iowa, held a ball for the benefit of that institution February 8.——Plans are being made for the erection of a new hospital at Terre Haute, Ind.——A regular meeting of the Woman's Aid Association of the United Presbyterian Churches of Pittsburg was held January 20. It is announced the hospital board has recommended the opening of a hospital for women and children. There is $2,000 available for the work and a committee has been appointed to take the initiative steps.——Dr. J. C. Wilson has been elected superintendent of Jefferson Medical Hospital (Philadelphia).——The annual report of the Margaret Pillsbury General Hospital at Concord, N. H., shows 160 patients were treated during the year.——Plans have been completed for the enlargement of the Kansas City Hospital, to cost $15,000.——The report of the Indianapolis City Hospital shows that during the year 1,277 patients were treated.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Jan. 26, 1895, to Feb. 1, 1895.

First Lieut. HENRY R. STILES, Asst. Surgeon, extension of leave of absence granted on account of sickness, is still further extended two months, on surgeon's certificate of disability.

Marine-Hospital Changes. Official list of changes of stations and duties of medical officers of the U. S. Marine-Hospital Service, for the sixteen days ended Jan. 31, 1895.

Surgeon H. W. AUSTIN, to proceed to New Bedford, Mass., as Inspector, Jan. 18, 1895.

LETTERS RECEIVED.

Anderson, Winslow. San Francisco, Cal.; Ayer. N. W. & Son, Philadelphia, Pa.

Boggs, W.R., Macon, Ill.; Barclay, W. F., Pittsburg, Pa.; Baker, Henry B., Lansing, Mich.; Balmer, William. Mount Vernon, Ohio; Batten, John M., Pittsburg, Pa.

Christenson, A., Washburn, Wis.; Coleman, J. F.. Montrose, Colo.; Calumet Chemical Co., Philadelphia, Pa.; Callaway, J. M.. Shreveport, La.

Damrell & Upham, Boston, Mass.; Dudley, E. H., Janesville, Wis.; Doliber-Goodale Co., Boston, Mass.; Dudley, A. Palmer, New York, N.Y.

Egan, P. Ralph, Fort Custer, Mont.; Eagleson, J. B., Seattle, Wash.

Fisher, Henry M., Philadelphia, Pa.; Follis, C. W., Burlington, Iowa; Ford, Charles, New York, N. Y.

Greenley, T. B., Meadow Lawn, Ky.; Graybill, A. G., Caledonia, Mich.; Griggs, S. C., & Co., Chicago, Ill.

Hollingsworth & Mathie, St. Louis, Mo.; Humphrey, The H. B., Boston, Mass.; Holleman, P. W., Roseland, Ill.; Heuel, Emil, New York; Hanson, J. P., Chicago, Ill.; Haughton, R. E., Midland, Texas; Hummel, A. L., (4) Philadelphia, Pa.

Indiana Bicycle Co., Indianapolis, Ind.

Johnson, H. P., Long Prairie, Minn.; Justice, C. R., Poland, Ohio; Jones, W. T., Georgetown, Texas.

Lehn & Fink, New York, N. Y.; Lyons, John A., Chicago, Ill.; Le Sage, Philip, Chicago, Ill.; Longmans, Green, & Co., New York, N. Y.; Lemberger, J. L., Lebanon, Pa.; Leedom, Chas., Philadelphia, Pa.

Moore, M. B., Woodburn, N. C.; McCoy, Wm. A., Madison, Ind.; Mercer, Archibald, Newark, N. J.; McGarvey, J. F., Lorain, Ohio; Mulford, H. K., Company, Philadelphia, Pa.; Millard, Perry H., Minneapolis, Minn.; Mayer, Oscar J., San Francisco, Cal.; Montgomery, E. E., Philadelphia, Pa.

Newman, Robert, New York, N. Y.

Parmele, Chas. R., Co., New York, N. Y.; Powers, C. A., Denver, Colo.; Proffitte, S. D., Cabool, Mo.; Plummer, Robt. Newton, Philadelphia, Pa.; Post, J. R., Rome, N. Y.; Pyncheon, Edward, Chicago, Ill.

Ridlon, John, Chicago, Ill.; Robertson, E. B., Jackson, Cal.; Rouleau, Z., Manteno, Ill.; Rosse, Irving C., Washington, D.C.

Stearns, F. & Co., Detroit, Mich.; Staver & Abbott Mf'g. Co., Chicago, Ill.; Sandrock, W. C., Baltimore, Md.; Sweeney, Arthur, St. Paul, Minn.; Steiger, E. & Co., New York, N. Y; Squibb, E. H., Brooklyn, N. Y.; Sullivan, T. J., Chicago, Ill.; Selden, Julia, Norfolk, Va.; Southam, Stanley, Manchester, Eng.

Trowbridge, L. S., Detroit, Mich.

Van Hook, Weller, Chicago, Ill.

Whetzel, F. F., Milwaukee, Wis.; White, J. A., Richmond, Va.